EDUCATING ABOUT DISABILITIES:

AN EVALUATION OF A TEACHING PACKAGE ON EPILEPSY FOR PRIMARY SCHOOL STUDENTS

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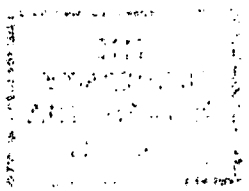

Educating about Disabilities: An Evaluation of a Teaching Package on Epilepsy for Primary School Students

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ABSTRACT

This dissertation addressed the problem of changing attitudes towards those people with disabilities, specifically changing the attitudes of primary school children towards people with epilepsy. A literature search was undertaken to assess the current views on the nature of attitudes and attitude change, and to examine the sources of attitudes toward the disabled.

A lack of knowledge about disabilities was seen as one determining factor influencing attitudes. As a result, a research study was undertaken which established the level of children's general knowledge of epilepsy using a knowledge-based questionnaire as the measuring instrument. After the questionnaire, the children were either (a) presented with a lesson about people with epilepsy (b) exposed to no further information about epilepsy. After six months, the scores of the different groups were compared, together with scores from a group of children who had not been exposed to the questionnaire nor been presented with any information. All children were given an attitude questionnaire following the final knowledge-based questionnaire. The children who had been presented with the lesson about people with epilepsy had significantly higher scores both on the knowledge-based and attitudinal questionnaires.

The dissertation presents an account of the above research, together with an evaluation of the teaching materials used.

ACKNOWLEDGEMENTS

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The biggest bouquet of all should go to the children, teachers, and principals of the schools without whose cooperation the epilepsy project could not have been undertaken. Finally, my husband, Trevor, and children, Katherine and Andrew, deserve my gratitude for their advice and interest, not to mention their patience!

CHAPTER 1:

INTRODUCTION

In 1984 the Research and Development Grants Advisory Committee of the Commonwealth Department of Health funded a research project to develop teaching materials about epilepsy.for primary school children. The project was based on view that models of health education about disabilities were lacking in the primary curricula, particularly in relation to epilepsy. Epilepsy has been the subject of considerable stigma resulting from both community attitudes and from the view that people with epilepsy have of themselves and their condition (Beran and Read, 1980). Ignorance is often associated with stigma (Goffman, 1963) and evidence suggests that attitudes which may be stigmatising are entrenched by the time people reach the end of adolescence (Klausmeier, 1971, Reimann, 1951). Therefore children of late primary age (ten+) were chosen as the target group for this project.

The role of teachers and school children has been established as a significant contributing factor toward setting people with epilepsy apart and to the possible development of dysfunctional behaviour in later life (Sutton and Beran, 1981). Little work had been done in Australia to survey knowledge and attitudes of children and teachers in regard to epilepsy, nor were there any adequate teaching materials for the primary age group.

The research project aimed to survey children and teachers to ascertain their knowledge about epilepsy and to develop a teaching package about epilepsy for primary school children. This was done using an experimental before-after design involving an experimental group (called Project Schools) and a control group (called Control Schools). As is typical of this design, the experimental group was given a pre-test (a questionnaire about epilepsy) immediately followed by an intervention (a set lesson on epilepsy), and then a post-test (the same questionnaire on epilepsy administered six months later); the control group received the pre and post-test without intervention. In addition, there was a group post-tested at the same time as the experimental and Control Schools (called New Schools) in order to measure the effect of the questionnaire on the scores of children in the Control Schools. Results were analysed by comparing the differences

between the pre-test and post-test scores of the experimental group and the control group, using t-tests. The research design is summarised in Table 1.1:

Table 1.1:
Research Design used in Epilepsy Project

School Research Categories	Questionnaire on Epilepsy	Teaching Package on Epilepsy	Questionnaire on Epilepsy
	(Term 1)	(Term 1)	(Term 3)
Project Schools (6)	X	X	X
Control Schools (6)	X		X
New Schools (6)			X

All teachers were interviewed informally about their knowledge of epilepsy and children not involved in any of the research category groups were interviewed about the questionnaire, the teaching materials and their knowledge of epilepsy and people with epilepsy. Full details of the implementation of the research project will be found in Chapter 4.

It was my job as Project Officer for this research project to develop the questionnaire to measure children's knowledge about epilepsy and to develop, trial and produce a teaching package on epilepsy suitable for primary school children. In addition, I conducted the research in schools: administering the questionnaires, teaching the set lesson, and interviewing teachers; I also interviewed children not participating in the experimental part of the project, analysed the data and wrote much of the research report.

It was not part of the Commonwealth funded research project to try to assess attitude changes which may have occurred due to the teaching package. However, as the ultimate purpose of the project was to try to provide knowledge in order to achieve improved attitudes, I thought it would be of value to try to determine whether , in fact, the children involved in the Project Schools had changed their attitudes towards people who had epilepsy after being exposed to the teaching package, in contrast to children in the Project and Control schools, who were not presented with the teaching material. To do this, I developed and administered a Likert-style attitude scale to the children in the Project and Control groups at the end of the project, and established a fourth group

of schools (Attitude Schools) as a new group totally ' uncontaminated' by exposure to the knowledge-based questionnaire or the teaching package. Scores of this fourth group of Attitude Schools were compared with those of the Control and Project schools.

It is the purpose of this thesis to, first, describe in general the nature of attitudes, sources of attitudes toward the disabled and techniques for attitude change. It also outlines the rationale for focussing research on teaching about epilepsy. Finally, the thesis documents the results of the research project and evaluates the subsequent teaching package for its effectiveness, both in educating children about epilepsy and producing a more positive attitude towards people with epilepsy. Some of the results appear in the Research Report (Mudge *et al.*, 1986) in an abbreviated form, but the research into attitudes and attitude change, and the implementation and results of the attitude questionnaire are unique to this thesis, as is the critical evaluation.

CHAPTER 2:

ATTITUDES TOWARDS PEOPLE WITH DISABILITIES

In this chapter the attributes of attitudes will be discussed in the light of studies which have sought to define and refine the concept of attitude; sources of attitudes towards the disabled will be reviewed, based mainly on characteristics summarised extensively by Hanoch Livneh (1982); and finally, techniques for attitude change toward the disabled will be examined.

2.1 Distinguishing Attributes of Attitudes

Numerous investigations have indicated that often people with physical disabilities are viewed less favourably than those who are not disabled (McDaniel, 1976). Others have noted that the stigma attached to having a disability of any kind results in decreased life chances (Goffman, 1963). As a result of society's rejecting attitudes, vocational and social opportunities available to the disabled are restricted (McKerracher, 1982, p.1). During the International Year of the Disabled (1981), the need to improve community attitudes toward the disabled was highlighted, especially for those whose attitudes are based on lack of knowledge and understanding of disabilities themselves. Attitudes can be, and often are, based on misinformation, and this forms the basis for prejudice.

The word 'attitude' itself has a lengthy history. It comes from the Latin *aptus*, meaning fit, connoting a readiness for action. In the late seventeenth century the term came to have another meaning, referring to the posture of a figure in a painting or sculpture. Two British philosophers, Alexander Bain and Herbert Spencer, employed the word in a scientific sense to denote a mental state, and the treatment of attitudes in psychology emerged with the very beginnings of experimental psychology itself (Calder and Ross, 1973, p.2). In his classic review of the history of attitude, Gordon Allport mentions two further historical forces which shaped our present concept of attitude: Freudians broadened the term to include societal phenomena such as prejudice and politics, and sociologists began to use attitude as an important variable in their studies of individuals in society (Calder and Ross, 1973, p. 2). The concept has also been used by those concerned with studying other abilities, such as instincts.

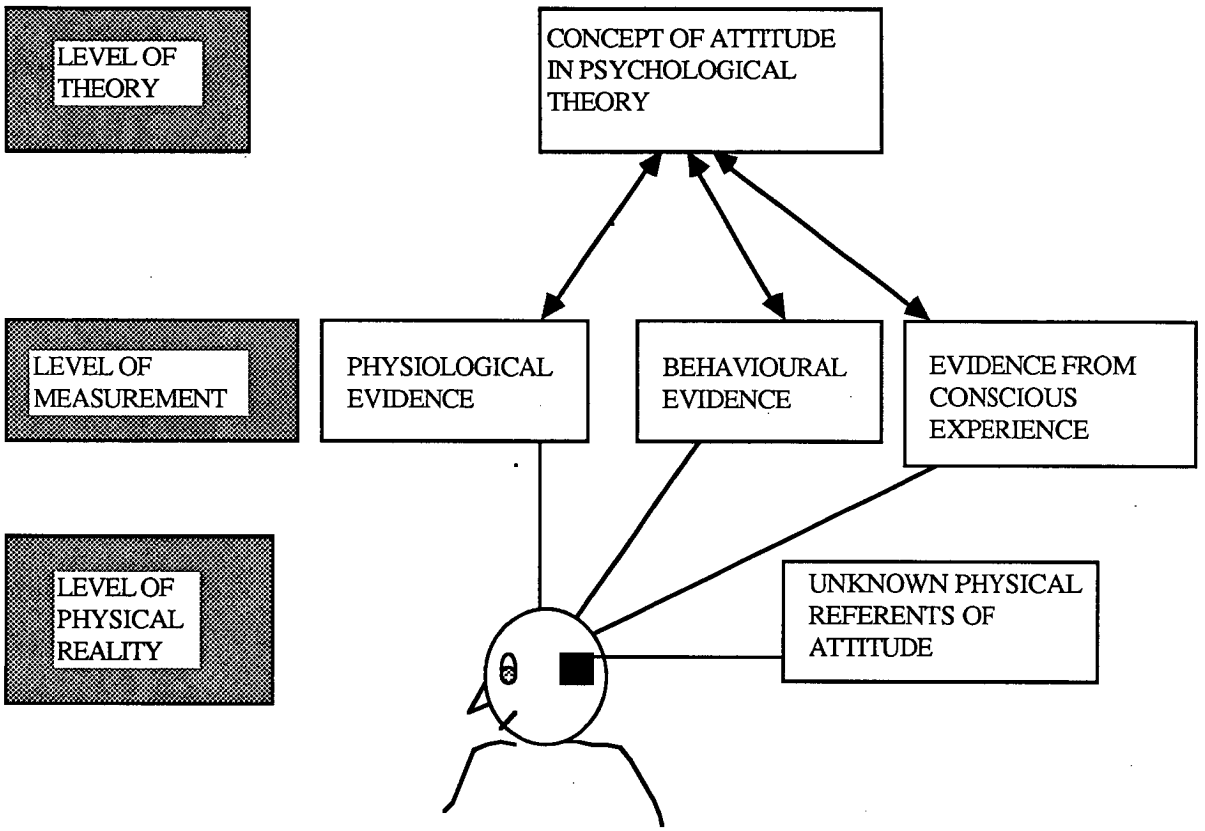
Since Allport's study in 1935, attitudes have been the subject of much theoretical and empiricial research. However, until attitudes could be quantified, it was difficult to assess their strength or effects. Departing from simply categorizing attitudes, in 1928, L.L. Thurstone established the first methodological and statistical technique designed to yield a quantitative representation of attitudes. Later in the 1950s Carl Hovland and Leon Festinger directed their attention toward determining how attitudes are changed (Calder and Ross, 1973, p. 2). The work of these early researchers has had a major effect on many disciplines concerned with social issues, from political science to education.

Gordon Allport observed that attitudes are measured more successfully than they are defined (Dawes, 1972, p. 2). As early as 1935 he was able to cite sixteen definitions. However, for some research purposes, it may not always be necessary to pinpoint a definition. If one is interested in attitude change, it is relatively easy to concentrate on the observable level of measurement, where any measured change is assumed to reflect some change in the unspecified concept of attitude (Calder and Ross, 1973, p. 3-4). However, if there is interest in relating attitude to behaviour and implicating causal links, the concept of attitude must be made clear in order to understand the relationship. The following aspects, based on Allport's work, help clarify the concept of attitude and work towards a definition:

(1) **Attitude is a theoretical concept**

Attitude exists only as an idealised theoretical abstraction--a theoretical concept useful in understanding people (Calder and Ross, 1973, p. 4). It is impossible to see or feel attitudes or to locate them in the body. They cannot be examined and measured in the same way as a person's height, weight or skin colour. Figure 2.1 illustrates one view of the links between theory and physical reality (Calder and Ross, 1973, p.5):

Figure 2.1:
Locus of Attitudes
(Calder and Ross, 1973, p. 5.)



(2) **Readiness to respond**

Readiness to respond or behave towards something is another important characteristic of attitude, according to Allport (Calder and Ross, 1973, p. 5). Whether this readiness is a latent process that occurs prior to behaviour, or is identical to the behaviour itself , is still unresolved. However Calder and Ross argue that the case for readiness as a latent process is more convincing, even if the exact nature of the process is still undetermined, although they do not demonstrate this comprehensively.

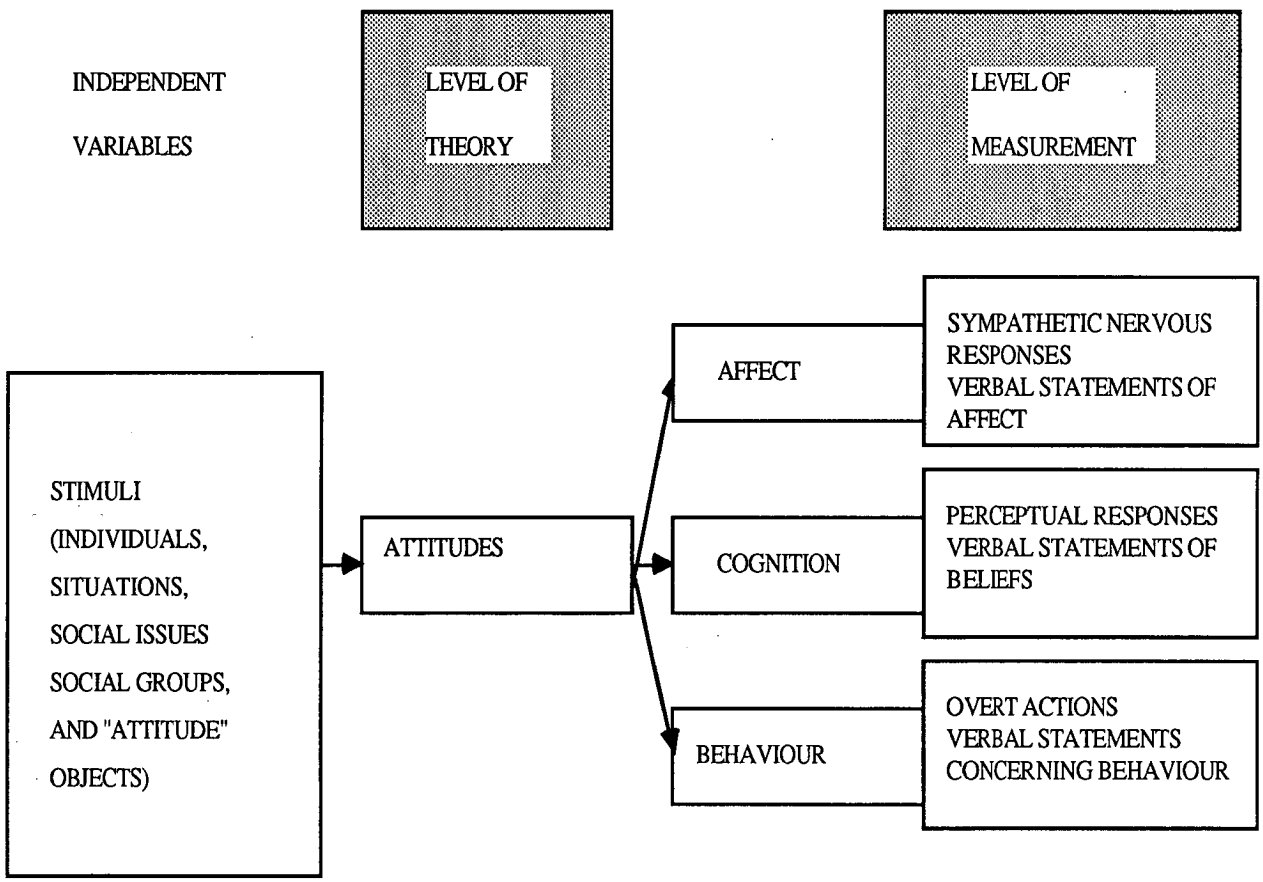
(3) **Attitudes are organised**

Allport has argued that attitudes are organised into several components with a definite structure

(Calder and Ross, 1973, p.5). One possible schema for this organisation is the cognitive-affective-conative model of attitudes, which structures attitudes in terms of three underlying components. The cognitive component is the rational, informational basis of attitude; the affective component is the feeling of liking or disliking for the attitude object; and the conative component refers to the strength of a person's behavioural tendencies toward the object (Calder and Ross, 1973, pp 5-6). As an example, a person might know that cats eat birds (cognitive component), like birds very much (affective component) and try to keep cats away from birds (conative component).

This cognative-affective-conative approach has a long intellectual history. In the *Republic* and in the *Phaedrus*, Plato conceived of the human soul as made up of three faculties: reason (cognitive), spirit (affective), and appetite (conative). Social psychologists have found this structure useful, and it is probably the most widely used conceptualisation of attitude (Calder and Ross, p.6) . It will be considered later in the discussion of techniques for attitude change.. Figure 2.2 represents this model schematically.

Figure 2.2:
Schematic Conception of the Cognitive-Affective-Conative Model of Attitudes (Calder and Ross, 1973, p.9)



(4) Attitudes are learned through experience

Another of Allport's characteristics of attitudes, and the least controversial, is that that they are learned mainly through experience. Attitudes help explain how people react to their experience. To illustrate this, consider how an adult's attitude toward religion often reflects his or her own religious experiences during childhood, or how adult attitudes towards child-rearing are influenced by how they were brought up by their parents.

(5) **Attitudes are directive**

There is considerable agreement that attitudes exert a directive influence on behaviour (Calder and Ross, 1973, p. 7). It seems probable that attitudes affect the way we view the world as well as the way we respond to it. Evidence indicates, however, that people may be more aware of the way in which attitudes determine their perceptions than of the way they determine behaviour; in other words, people are more likely to be unaware of the impact of their attitudes on their behaviour than on their perceptions. It was this relationship between attitudes and behaviour that provided the rationale for extending the Commonwealth research project under discussion in this thesis to include a measurement of attitudes at the end of the project. It did not seem sufficient to merely introduce knowledge and expect attitude change without any means of assessment, and without attitude change, there was unlikely to be behaviour change.

Definition

A definition summing up these various points is now possible. *Attitude is a theoretical abstraction with no known physical referent. It predisposes a readiness to act in some way, and an internal organisation is generally supposed. An attitude is assumed to be a result of past experience and to exert a directive influence on behaviour* (Calder and Ross, 1973, p. 8).

Having looked at the nature of attitudes, it is now pertinent to examine the way in which attitudes toward the disabled are formed.

2.2 Sources of Attitudes Toward the Disabled

From the previous discussion, it is apparent that in order to understand physical reality, we use concepts such as attitude to explain and predict behaviour. To understand the nature of ill feelings towards those who are disabled, it is useful to discuss some of the sources of attitudes. Most of these sources are based on a detailed classification of negative attitudes towards people with disabilities by Hanoch Livneh (Livneh, 1982). Livneh has correctly suggested that the major drawback of this attempt to classify attitudes towards the disabled is that there is some overlap in

the categories he proposes. However, the classification is helpful in sorting out the various sources of influence on the development of attitudes toward the disabled.

(1) **Socio-cultural conditioning**

The following are social and cultural norms, standards, and expectations which often lead to the creation of negative attitudes toward people with disabilities:

(a) emphasis on the idea of the "body beautiful", youth health, athletic ability, personal appearance and "wholeness". People are urged to conform to these societal standards;

(b) emphasis in Western countries on personal productiveness and achievement, whereby a person is judged on ability to be socially and economically competitive;

(c) the "sick role" attributed to disabled persons by society, exempting such a person from normal societal obligations and responsibilities;

(d) disabled persons are viewed to have marginal status by society; they are different, "outsiders", stigmatised, resulting in the person having a devalued or deviant status.

(2) **Childhood influences**

Experiences in early childhood are said to influence a child's beliefs and values. As Livneh notes, "Rearing practices which emphasize the importance of health and normalcy and which threaten any infringement of health rules with sickness, illness, and long-term disability, result in aversion towards individuals affected" (1982, p.339).

(3) **Psychodynamic mechanisms**

Unconscious psychological process, which are also related to childhood experiences, have been advanced in the literature to explain the attitudes of the non-disabled towards the disabled. These unconscious processes include:

(a) requirement of mourning: The non-disabled person wants the disabled person to suffer and show appropriate grieving for the loss of some physical capacity. This grief protects the non-disabled person's sense value for the functioning body. If the disabled person denies or rejects the "suffering role", the non-disabled person reacts with negative attitudes (Livneh, 1982, p.

340);

(b) unresolved conflict over scopophilia and exhibitionism: The importance of vision in early psychosexual and ego development is stressed by psychoanalysts. Sight is significant in terms of pleasure of looking at and being looked upon in the pregenital states and any unresolved conflicts related to these developmental states may be a consequence of the approach/fascination-avoidance/repulsion conflict often associated with the sight of a disabled person (Livneh, 1982, p. 340).

(c) "spread phenomenon" resulting from negative attributes: the generalisation from one perceived characteristic (e.g. a physical disability) to other unrelated characteristics (e.g. emotional or mental maladjustments) is referred to as "spread" . This "spread" or "halo effect" frequently results in attributing certain negative characteristics to those with disabilities;

(d) associating responsibility with etiology ('blame the victim'): In this situation the disabled person is held morally accountable for his or her disability, resulting in negative feelings in the non-disabled;

(e) fear of social ostracism: The non-disabled person fears that an association with disabled persons may imply some psychological maladjustment on his or her part;

(f) guilt of being "able-bodied": Guilt associated with having an intact body together with the possible injustices directed toward people with disabilities (e.g. lack of involvement in charitable activities) may result in a non-disabled person avoiding the presence of a disabled individual.

(4) **Disability as a punishment for sin**

Sin and punishment and disability are other possible psychodynamic mechanisms operating in negative attitudes towards disability. They are important influences and Livneh gives them special emphasis.

(a) Disability as punishment for sin: This is the view that the disabled person's suffering is caused by either a personally committed evil act or by an ancestral wrongdoing (Livneh, 1982, p.

340). This leads to the view that the disabled person is dangerous or evil.

(b) Disability is an unjust punishment: There is also the unconscious belief that a disability is an unjust punishment and the disabled person will commit an evil act to balance the injustice.

(c) The non-disabled person fearing imminent punishment: Non-disabled persons may fear that they have not received retribution for past misdeeds and therefore avoid disabled persons because of their guilt for not being punished or because they fear imminent punishment by association.

(5) **Anxiety-provoking unstructured situations**

Another of the major sources of attitudes noted by Livneh is that of anxiety caused by unstructured situations. Unfamiliar situations are known to create anxiety and confusion. In an encounter with a disabled person, a non-disabled person is often faced with a situation in which the socially accepted rules and regulations for proper interaction are not well known, causing withdrawal from the situation or anxiety and strain. Livneh also notes that lack of factual knowledge and information about disabling conditions tends to lead to negative attitudes (1982, p. 341). This supports the contention that non-disabled persons without knowledge of disabilities are likely to have uncomfortable feelings about an encounter with a disabled person. Lack of contact with a disabled person also contributes to a fearful and negative reaction.

(6) **Minority group comparability**

This is the view that the attitudes toward the disabled parallel those manifested toward minority groups in general. In a study of attitudes towards the disabled, Yuker, Block and Campbell (1966) developed a scale for their measurement, the Attitude Toward Disabled Persons (ATDP) scale. Yuker concluded that "in many respects prejudices toward the disabled are similar to prejudices toward other groups. Thus the person who is prejudiced toward the disabled will believe that all disabled persons are alike" (Yuker, 1965, p. 16). The disabled are perceived as marginal and are therefore devalued and inferior in status, as are ethnic, racial and religious groups.

(7) **Prejudice-inviting behaviours**

Certain behaviours by disabled persons result in discriminatory practices toward them.

(a) Some disabled persons may seek some gain from their disability, act fearful, insecure, inferior or dependent and thereby strengthen certain prejudicial beliefs in the non-disabled.

(b) Stereotypical and negative attitudes may be fostered by lack of interest on the disabled person's part or lack of effective public relations campaigns or efforts by self help groups in combating public ignorance about disabilities.

(8) **Influence of disability-related factors**

Several variables affecting attitudes toward disabled persons are connected with the disabilities themselves.

(a) Functional versus organic disabilities: Personality traits of persons with disabilities which are functional (e.g. alcoholism) rather than organic (e.g. blindness, cancer) are reacted to more negatively. Employers prefer individuals who are physically disabled (e.g. those with paraplegia) rather than the more functionally impaired persons (such as those with emotional problems).

(b) Level of severity: The more severe a disability, the more negatively it is perceived.

(c) Degree of visibility: Usually the more visible a disability is, the more negative the reactions to it.

(d) Contagious vs. non-contagiousness of disability: The more contagious a disability, the more negatively it is reacted to.

(e) Degree of predictability: The more curable and therefore predictable the disability is, the less negatively it is perceived.

(9) **Demographic variables associated with attitudes**

Most of these variables are correlational rather than causal in nature. Several major reviews of studies noted by Livneh (1982) have investigatied demographic correlates of negative attitudes toward people with disabilities and reached these conclusions:

(a) *Sex:* Females exhibit more favourable attitudes toward individuals who are physically disabled than males.

(b) *Age*: Generally attitudes are more positive in late childhood and adulthood, and less favourable in early childhood, adolescence, and old age.

(c) *Socio-economic status*: Higher income groups show more favourable attitudes toward emotionally and mentally disabled persons than low income groups, but no differences were found in regard to physical disabilities.

(d) *Level of Education*: Most studies conclude that educational level is positively correlated with more favourable attitudes toward disabled persons.

(10) **Personality variables associated with attitudes**

The major findings of researchers looking at the association of several personality traits with attitudes towards the disabled have been categorised by Livneh (1982), who has highlighted the following characteristics:

(a) *Ethnocentrism:* High ethnocentrism is related to lack of acceptance of disabled people.

(b) *Authoritarianism*: There is a positive correlation between low authoritarianism and accepting attitudes towards the disabled.

(c) *Aggression:* Less aggressive people express more positive attitudes toward the disabled.

(d) *Anxiety*: A high level of anxiety is positively correlated with rejection of disabled individuals.

(e) *Self-concept*: Persons who are secure and confident in their personality and body concept also tend to feel more positive and accepting of disabled persons.

(f) *Ambiguity tolerance*: Ability to tolerate ambiguity is positively correlated with acceptance of the physically disabled.

(g) *Social desirability*: The need for social approval and acceptance by others was positively associated with acceptance of people having disabilities.

(h) *Intelligence*: Tentative conclusions have been drawn relating the intellectual capacities of non-disabled persons and their acceptance of disability.

In summary, Livneh has provided a useful description of the mixture of sources from which attitudes towards the disabled may stem. Some sources seem to be imbedded in society and our cultural conditioning, which holds that the body should be healthy and perfect in appearance in order to meet society's standards; others sources derive from the mental make-up of human beings, which seems to propel people to look or stare at a disabled person, yet feel guilty for doing so; other psychological sources identified by Livneh, such as considering disability as a punishment for sin, have a more religious basis. Unstructured situations where a non-disabled person is unsure of what to expect or how to react are another source of uncomfortable attitudes towards the disabled and places the disabled in a marginalised group, similar to minority groups, with whom the average person can find no common ground, and therefore feels guiltily anxious. Finally there are disability related factors, such as the severity of the disability, its visability and its contagiousness, which affect attitudes, together with demographic characteristics such as sex, age, socio-economic status, education, tolerance to ambiguity, and even intelligence. Livneh's characteristics will again be considered in the discussion of the research methodology, but it is now appropriate to consider the kinds of measures which may lead to attitude change.

2.3 Techniques for Attitude Change

There has been extensive research into the existence of negative attitudes towards the disabled and the sources and variables associated with these attitudes, but much less research has been directed at modifying attitudes towards disabled persons (Donaldson, 1980, p.504-5). An early researcher, Lewin (1946), postulated that attitude or opinion modification was a result of either restraining or increasing forces surrounding an opinion or behaviour. To modify attitudes, it is necessary to unfreeze the present attitude by either producing a restraining force or increasing a driving force (Donaldson, 1980, p. 509). This approach aims to reduce the anxiety-provoking unstructured situations mentioned earlier by Livneh.

Following this view, Evans (1976) postulated that strain was caused when non-disabled persons encountered disabled persons and this strain was a strong factor in creating and maintaining negative attitudes toward disabled persons. Evans thought that disabled persons could reduce this strain by making known their feelings about their disability and the curiosity of others, and also by providing some guidelines for interacting during interviews (Donaldson, 1980, p. 509). Langer *et al.* (1976) also hypothesized, as mentioned by Livneh, that non-disabled persons feel discomfort because they have a conflict over wanting to stare at the disabled person, who is a novel stimulus, and wanting to adhere to the social norm that staring at another person is impolite (cited by Livneh, 1980). They concluded that when staring was allowed, the discomfort was reduced, resulting in less avoidance when coming into contact with a disabled person (Donaldson, 1980, p. 509).

Another way of reducing discomfort is by presenting a driving force in the form of a powerful message to unfreeze a currently held attitude. Donaldson suggests that information provided by live or media presentation by credible presenters who represent non-stereotyped images of disabled persons provides a powerful message which will unbalance a currently held stereotype and lead to a more positive attitude formation (1980, p. 510). She argues that positive attitude change or reduced avoidance most frequently results when exposure to disabled persons is powerful enough to change stereotyped images by either significantly reducing strain and discomfort on the part of the

non-disabled; or presenting enough information to contradict the stereotyped image so that the current attitude is unfrozen or changed (1980, p. 510).

Other contributions to more positive attitudes are disabled persons acting in a non-stereotyped ways and empathetic role playing. (Donaldson, 1980, p. 511). Negative shifts in attitudes can occur when the non-disabled person experiences strain or discomfort because of fear of behaving inappropriately and when the non-disabled person receives information that confirms or presents a negative stereotype of helplessness, hopelessness, sickness, separateness, or resentment and anger (Donaldson, 1980, p. 511). Such images should be avoided in initial attempts to restructure attitudes toward the disabled. Table 2.1 reproduced from Donaldson gives an overview of investigations attempting to influence attitude change (Donaldson, 1980, p. 506).

TABLE 2.1
OVERVIEW OF RESEARCH FINDINGS: MODIFICATION OF ATTITUDES TOWARD DISABLED PERSONS (Donaldson, p. 506)

Positive Change		*No Change*	*Negative Change*
Anthony (1969): Exposure of new camp counselors to summer camp program in which disabled children were integrated.	Lazar, Gensley, and Orpet (1971): Exposure to disabled adults who visited class as guest lecturers for gifted children in summer workshop.	Cole (1971): Increased contact through class discussions in which a disabled person was a participant.	Coburn (1972): Increased contact with disabled clients for newly graduated re-habilitaiton counselors enrolled in a 6 week induction training program.
Brooks and Bransford (1971): Use of 4 week summer workshop concentrating on the affective domain with regular class teachers and administrators.	Lazar, Orpet and Demos (1976): Sequenced instructional program with positive reinforcement for a strong cognitive approach in group discussions.	Donaldson, and Martinson (1977): Presentation of audio discussion by disabled persons to college students.	Granofsky (1956): Social contact during four 2 hour periods of 104 women with hospitalized males.
Clore and Jeffrey (1972): Effects of disability simulation in a wheelchair.	Marsh and Friedman (1972): Use of Vision Education program with sighted high school students and blind peers.	Forader (1970): Presentation of live, video and audio factual persuasive communication to college students by nondisabled person.	Siperstein, Bak, and Gottlieb (1977): Group discussions by nonhandicapped children elicted by a pictured child with visible stigmata (Down's Syndrome).
Donaldson and Martinson (1977): Presentation of live and video panel discussions by disabled persons.	Rapier, Adelson, Carey, and Croke (1972) Pre- and postassessment of attitudes in classrooms in which a disabled child was integrated.	Wallston, Blanton, Robinson and Pollchink (1972): Effects of experience with disabled on a group of student volunteers in a summer parks program.	Wallston, Blanton, Robinson and Pollchink (1972): Effects of experience with disabled youth in Junior Achievement on 42 youth and 30 advisors.
Evans (1976): Interaction of non-disabled person with blind confederate.	Rusalem (1967): Six 1 hour exposures to deaf-blind children for 28 parochial high school girls.	Wilson and Alcorn (1969): Effects of self selected 8 hour disability simulation on 80 special education students.	

Positive Change	*No Change*	*Negative Change*
Harasymiw and Horne (1975): Pilot-integration project with continuum of support services.	Sedlick and Penta (1975): Presentation of a videotape of a successfully rehabilitated person with quadriplegia.	Wyrick (1968): Effects of lecture course in Rehabilitation Psychology.
Langer, Fiske, Taylor and Chanowitz (1976): Reduced avoidance of disabled person in controlled contact by giving opportunity for nonobserved staring.	Yerxa (1971): Information provided through structured dyadic self instructional program, with discussion between two nondisabled participants.	

Four studies indicate negative shifts in attitudes, while six produced no significant changes; moreover, some studies lacked rigour in their experimental designs or were not consistently based on theoretical models (Donaldson, 1980, p. 505).

According to Donaldson, techniques used in attempts to produce attitude change toward disabled persons can be summarised into the following categories: (1) direct or indirect (media) contact with or exposure to disabled persons, (2) information about disabilities and persuasive messages, (3) disability simulation, and (4) group discussions. Donaldson notes that some studies have looked at more than one of these types of experiences and in some categories only a few research results have been published. Yet despite the dearth of research, it is possible to present some tentative suggestions for theory and practice in changing attitudes towards the disabled. These points will be re-considered later in this thesis in the discussion of teaching materials developed for primary school children to learn about epilepsy.

(1) **Contact or exposure**

Assessments have been made on the effects of nonstructured direct experience with disabled persons as well as the effects of carefully controlled, structured presentation of or experience with disabled individuals, such as a live situation or media presentation. Results indicate that structured experiences with, or presentations of, disabled persons consistently resulted in positive attitude change.

However, contact with disabled persons *per se* does not necessarily produce positive, non-stereotypic attitudes (Donaldson, 1980, p. 505). One important factor in any presentation is

that disabled persons have at least equal status with the non-disabled person, whether there is actual interaction or not (Donaldson, 1980, p. 505). Equal status means that the disabled person is approximately the same age as the non-disabled person and/or is approximately equal in social, educational, or vocational status; nonequal status is when the disabled person is significantly younger than the non-disabled person or in a position of receiving help or assistance. Equal status interactions were present in seven of the eight studies that produced positive attitudinal shifts (Donaldson, 1980, p. 505). Successful experiments in attitude change have also been associated with the disabled persons not behaving in a stereotypic manner (Donaldson, 1980, p. 507). These points will be reiterated later in the discussion of the teaching package on epilepsy, where children with epilepsy were shown acting in normal, non-stereotypical ways and were characteristed to maximize equal status with their viewers.

(2) **Information and persuasion**

Presentation of information with an overt or covert intention to persuade subjects to change their attitudes toward a particular topic has been used extensively in general attitude research (Donaldson, 1980, p. 508). Donaldson's research indicates that there are no direct, causal relationships between the provision of limited information about disabilities and attitude change (p. 508).

This view is supported by Klausmeier (1971) who notes that the cognitive component of attitude change (see earlier discussion) is informational content, for example, what one knows about epilepsy. The affective component refers to the emotions associated with the attitude object, that is whether it is liked or disliked (1971, p.358). Commercial advertising uses emotional appeal with little informational input because advertisers want people to have a favourable attitude toward a product and buy it. Teachers, on the other hand, usually present information without trying to persuade or influence. This approach is more rational but less effective in influencing attitudes (Klausmeier, 1971, p.359).

(3) Disability simulations

Results of a study conducted by Clore and Jeffrey (1972) indicated that role playing and the vicarious experience of watching someone role play were "effective methods of modifying at least some dimensions of attitudes toward disability (Donaldson, 1980, p. 508). It was also seen as important for the role player to observe the reactions of non-disabled persons and for the person playing the role to be perceived by observers as disabled, rather than having a non-disabled person playing disabled (blind folded, for example) (Donaldson, 1980, p. 508-9).

(4) Group discussions

Studies indicate that unstructured group discussion is likely to strengthen the pre-discussion opinion held by group members. However, one study (Lazar *et al.*., 1976) successfully used a cognitive rather than affective approach to discussion (see Figure 2.2 for explanation of these approaches).

Donaldson concludes that stereotypic attitudes and/or strain and discomfort in the presence of the disabled can be modified through planned experiences, "Short, structured presentations of, or experiences with, persons who represent non-stereotypic images of disabilities and are of equally valued status in relation to participants have been predictably effective in short term attitude modification" (1980, p. 511). In order to maximise the effect of brief presentations, she suggests provision of opportunities through live or media presentations for disabled persons to convey information

* about what it is like to be disabled;
* what they are like as individuals;
* how they expect non-disabled persons to relate to them.

Game-type simulations have little effect in helping participants to see disabled persons in less stereotypic ways, however, carefully controlled simulations of disabling conditions which allow for the observation of the reaction of non-disabled persons are effective. Finally, group discussions should be conducted carefully to ensure that discussions are based on information

rather than on biased opinions and emotions (Donaldson, 1980, p. 511). These factors contributing to formation of positive attitudes are relevant to many groups of devalued people, not only the disabled. These recommendations presented by Donaldson were taken into consideration when designing classroom materials for primary school children about epilepsy and will be more specifically discussed in Chapter 3.

2.4 Summary

The view has been presented that attitude is a theoretical concept useful in explaining and predicting behaviour. Attitudes derive from various sources such as socio-cultural conditioning, childhood experiences, psychodynamic mechanisms, anxiety-provoking situations, factors related to the disabilities themselves, and demographic and personality characteristics. Approaches which have successfully modified attitudes have been discussed. From this general discussion of attitudes and their modification, it is now appropriate to turn to the main focus of this thesis: modifying children's attitudes towards people with disabilities, specifically people with epilepsy.

CHAPTER 3:

RATIONALE AND THEORY UNDERLYING THE EPILEPSY RESEARCH PROJECT

Having looked at the general nature, sources and modification of attitudes it is now time to focus on the specific concern of this thesis: informing children of primary school age about epilepsy and assessing changes in attitude. First, it is of interest to briefly review previous investigations of children's attitudes towards the disabled. Jones (1967) found that four years was the age at which children begin to perceive limitations imposed by physical disability; in a study by Billings (1963) attitudes of non-disabled children toward physically disabled children were found to be significantly more unfavourable than their attitudes toward non-disabled children (Rapier et al., 1972, p. 219). The need for non-disabled children to understand disabled children in general education classes has been well documented (Gottlieb, 1975; Levitt and Cohen, 1976; MacMillan and Jones, 1974; Monroe and Howe, 1971, Jones, *et al.*, 1981). Jones *et al.*. (1981) note several attempts to develop effective programs to change perceptions about disabled persons. However, as mentioned earlier by Donaldson (1980), procedures for accomplishing positive attitude changes have not always been rigoursly researched.

3.1 Why epilepsy?

Epilepsy was the disability selected for research in this research project because of the general lack of understanding about the condition, and because epilepsy can be frightening to those unaware of its causes or effects. Affecting approximately one per cent of the population, epilepsy goes undetected (hence, its being termed a "hidden disability") until a sudden and sometimes dramatic seizure occurs, causing embarrassment to the person with epilepsy and fear on the part of people witnessing the seizure.

Traditionally epilepsy has been regarded as a mysterious, frightening condition, stigmatising those who have it. Its name is derived from the Greek verb, meaning a condition of being overcome, or seized or attacked, and suggesting that the seizure was carried out by an outside force. For this reason beliefs developed that the seizure was caused by a god or demon and it

became known as the sacred disease. About 400 B.C. Hippocrates theorized that epilepsy originated in the brain and was in no way a sacred disease, and in the late nineteenth century, Dr. John Hughlings Jackson defined seizures as a condition produced by violent disorderly discharges of brain cells. Despite the many ideas people have about the word "epilepsy", it means nothing more than a tendency to have seizures. Seizures are often called by other names, such as spells, attacks, fits and convulsion.

Some understanding of epilepsy is necessary in order to appreciate the nature of the difficulties it presents to those who have it and the reasons why the stigma should be removed from it. There is no definite reason why some people contract epilepsy and others do not, but the tendency to have seizures depends on one's inherited 'seizure threshold'; the higher the threshold, the lower the potential for seizures (Human Rights Commission, 1985, p. 13). Seizures are manifestations of a sudden surge in the electrical activity within the brain and the frequent occurrence of these is central to epilepsy; one seizure alone does not indicate a person has epilepsy. Usually epilepsy occurs alone, although prevalence is higher when certain other disabilities occur, such as brain damage, intellectual disadvantage and cerebral palsy, as well as with rarer conditions like tuberous sclerosis (Human Rights Commission, 1985, p. 14). It can begin at any time, but as shown here in Table 3.1, some age groups are at a greater risk than others.

Table 3.1:
Age group by percentage in which seizures first occur

Age groups	First seizures occuring (percentage)
0-9	47
10-19	30
20-29	13
30-39	6
40+	4

(from Human Rights Commission, 1985, p. 15).

The Human Rights Commission report on Epilepsy and Human Rights concludes that, "An emphasis on services and programmes for use by those under twenty years of age is clearly warranted where epilepsy is concerned" (1985, p. 14).

In many cases the cause of epilepsy is unknown, but head and birth injuries, brain tumours, hardening of the arteries and fevers in infants are a few. Over twenty types of seizures have been classified, based on clinical observations and readings of electrical activity in the brain but they fall into two main categories, partial and generalised. In partial seizures increased discharges begin in one area of the brain and remain there. Since each area of the brain controls different bodily functions, functions located at the site of increased activity will be impaired (Human Rights Commission, p. 15). Symptoms of the seizures vary from movement which cannot be halted at will, tingling, light flashes, buzzing, visual hallucinations, sweating or, during a complex partial seizure, a person may remain still or engage in incongruous behaviour such as tugging at clothing, smacking the lips, or wandering unconsciously. Generalised seizures involve increased electrical activity in both sides of the brain and consciousness is usually lost. Generalised seizures take many forms: the absence seizures (cessation of activity and staring into space which may be confused with daydreaming); atonic seizures (loss of muscle tone resulting in a slump or fall); and grand mal or tonic-clonic seizures (stiffening of the body followed by jerking), amongst others (Human Rights Commission, p. 17). Seizures are controlled using medication and it is estimated that 85 per cent of people who have epilepsy achieve total or partial control with medication, if diligently taken (Human Rights Commission, p. 17).

Today epilepsy is commonly more of a social problem than a medical one. A majority of people with epilepsy can use medication to control seizures completely, but they continue to fear hostility, if not actual discrimination. According to Scambler and Hopkins, many people with epilepsy (and their families) may be increasing their distress by concealing or even denying the problem (1986, p. 26). They found in their interviews of ninety-four people with epilepsy that those who developed epilepsy at an early age reported a sense of shame or resentment in their parents, and some discovered the true nature of their condition only much later. Newly diagnosed adults and parents of children with epilepsy assumed they would meet a great deal of hostility and discrimination. Consequently, almost all of them only told family and close friends; more than half of those who married after the diagnosis never told their partners; and employers were informed in only half the

cases (*New Society*, 9 May 1986, p. 20).

There is some indication that attitudes towards people with epilepsy may be improving: in the above mentioned survey, of those who decided to be frank about their condition, only a third could remember a hostile episode and of those who disclosed their condition to employers, only a few lost their jobs or were hampered in their careers (*New Society,* 9 May 1986, p. 20). Caveness *et al.* (1974) reported that the majority of Americans held positive attitudes towards persons with epilepsy and figures from the Gallup Poll conducted every five years since 1949 indicate a trend toward increasing public understanding and support of those with epilepsy (Ryan *et al.,* 1980, p. 433-34). Critics of surveys, however, question whether attitude studies can predict actual behaviour (Schuman, 1972); they argue that attitude surveys may reflect more tolerant views than actually exist because respondents feel pressure to voice socially acceptable opinions; moreover, people working with persons who have suffered social rejection due to epilepsy distrust reports of widespread public understanding of the disorder (Ryan *et al.*, 1980, p. 434).

Much of the literature about people with epilepsy indicates that prejudice still remains, fed by superstition and supported by out-dated laws, even after the original social conditions have changed. People with epilepsy have been shunned and sometimes confined to asylums chiefly because people have feared the typical seizure, known as the grand mal, where the person with epilepsy would fall down shaking and jerking. Not realising what caused the seizure, people erroneously believed it was a sign of insanity, possession by evil spirits, or witchcraft; and they thought it was infectious. Based on the mistaken belief that epilepsy is inherited, some countries prevented people with epilepsy from marrying or having children. The old attitudes of fear and prejudice also bar people with epilepsy from employment in some industries. This prejudice puts the person with epilepsy in a similar category as people from other minority groups who also encounter discrimination.

There is evidence cited in the Human Rights Commission report (1985) that misinformation and lack of understanding by the general public disrupt the lives of those with epilepsy, more than any

other factors . The report cites a 1972 survey of 602 Sydney adults undertaken by Vinson. who concluded the following from his analysis:

* 13 per cent of respondents would be worried if their children played 'in the back yard' with children who had epilepsy;

* 9 per cent would be worried about their children associating at school with children who had epilepsy;

* 38 per cent recommended children with epilepsy should attend a 'school for epileptics';

* 14 per cent believed people who had epilepsy should not work in jobs in the community;

* 33 per cent believed persons who had epilepsy should not go out unescorted;

* 54 per cent said some limitations in sport should apply (Vinson, 1975, pp. 663-664).

Vinson also presented respondents with forced-choice items concerning notions about disabled people and called for affirmation or rejection of these ideas. His results are seen here in Table 3.2.

Table 3.2:
Ideas Associated to a "Likely/Possible Degree with Four Types of Handicap*

Item	Proportion of Respondents			
	%	%	%	%
	Diabetic	Crippled	Deaf	Epileptic
Punishment for parent's sin	6.5	13.6	9.6	9.1
God-given sacrifice	12.3	15.4	14.3	12.6
Sexual misbehaviour	10.8	21.1	16.8	19.4
Capable of violent crime	29.7	32.2	34.1	55.5
Cunning	31.2	46.7	45.3	45.5
A mental illness	15.0	38.9	33.5	61.0
Low intelligence	20.4	47.0	38.5	45.0
Drug addiction	32.6	27.4	27.2	33.2
Poverty	19.4	26.4	18.1	14.8
Heredity	79.1	57.1	65.6	74.9
Accident at birth	22.3	91.0	80.5	61.3
Middle-aged parents	22.4	35.9	29.6	28.6
Own alcoholism	36.7	17.3	16.3	25.4
Head injury	14.5	65.4	82.9	68.3
Sugar imbalance	90.7	18.4	13.3	27.2

*Number of respondents = 605 (Vinson, 1975, p. 665).

This table indicates that more than half the sample associated epilepsy with a potential for violent crime and 61.5 per cent associated epilepsy with mental illness; it also suggests that the idea of a

physical disability being a divinely ordained sacrifice was still very much alive ten years ago.

Another recent study conducted by Wills and More surveyed 301 Australian men born after World War II, who currently occupied middle management positions. These men were asked to rank their acceptance of thirty community sub-groups and the questions were designed to determine quick 'gut' reactions: Would the respondent accept readily, accept but with reservations, accept reluctantly or never accept an Aborigine, for example. The results of the survey shown here in Table 3.3, indicate a high rate of acceptance for Catholics, Masons, footballers, doctors and auditors. Acceptance fades when the respondents come to paraplegics and Jews. The dividing line between acceptance and rejection comes between actors (53 per cent acceptance) and intellectuals (49 per cent acceptance). People with epilepsy have only 36 per cent acceptance, just above trade unionists and are ranked only seventh from the bottom in a list of thirty community sub-groups.

This survey indicates that there is considerable bias against foreigners, Jews and the physically disabled, as well as Aborigines, women's liberationists and homosexuals. Wills and More suggest that more accepting attitude changes which were supposed to have occurred in Australia in the 1960/70s may have only affected some of the population and have yet to reach the section of the population they sampled. They make the following comment on their findings: "It augers ill for the future if such strategically placed groups as middle managers, with their potential to become top managers, are found to be hanging on to counter-productive attitudes" (Carr, 1981, p. 36).

Table 3.3
Attitude of middle managers to 30 community sub-groups expressed as percentages of a sample of 301 (listed in order of acceptability)
(Carr, 1981, p. 36)

Sub-Group	Percentage accepting the sub-group	Percentage with reservations about or reluctance to socialise with the sub-group	Percentage rejecting the sub-group
Catholics	85	15	0
Tradesmen	80	20	0
Doctors	79	21	0
Masons	76	22	2
Factory Hands	72	28	0
Footballers	71	29	0
Auditors	71	29	0
Policemen	60	31	0
Truckdrivers	67	33	0
Americans	67	33	0
Blind People	66	43	0
Senior Executives	63	37	0
Paraplegics	58	41	1
Jews	57	42	1
Artists	56	44	0
New Australians	55	45	0
Japanese	53	46	1
Actors	53	46	1
Intellectuals	49	51	0
Politicians	48	51	1
Religious People	39	59	2
Spastics	38	59	3
Negroes	38	61	1
Epileptics	**37**	**61**	**2**
Trade Unionists	36	62	2
Women's Liberation	32	64	4
Lesbians	15	66	19
Aborigines	11	84	5
Prostitutes	9	68	23
Homosexuals	9	65	26

Many of the negative attitudes about people with epilepsy which are prevalent in the general community have also been found within the medical profession. In a study conducted with a sample of fifty Sydney general practitioners it was found that doctors still hold the view that there is a stereotyped epileptic personality: emotional instability with particular emphasis on 'mood

swings' and 'emotional problems' (Beran, 1982, p. 324). Beran notes that there is much data to refute the existence of such a stereotyped personality, particularly because epilepsy represents a variety of seizure disorders, not just a single type. As well as perceived emotional instability, the doctors indicated that people with epilepsy had a decreased 'ability to relate to others' and felt 'people with epilepsy are treated as a minority group' (Beran, 1982, p. 324). Beran argues that doctors hold negative attitudes similar to those prevailing in the community and that there is a need to change doctors' awareness of the many social problems faced by those with epilepsy (1982, p. 324-5).

3.2 Theoretical Base to Attitude Change Used in the Research

As there is a strong tradition of myth and ignorance surrounding epilepsy, it was judged an appropriate disability on which to aim a teaching program for children in late primary school. It was considered that children of approximately 10-12 years of age would not yet have fixed ideas about people with epilepsy and would be able to cope with the level of language necessary to understand the concepts involved in such a program. Accepting Allport's hypothesis that attitudes may be organised into cognitive, affective and conative aspects, it was decided to focus the teaching program on information about epilepsy, while at the same time providing an affective or emotional appeal. It was hoped that such a presentation would result in a behavioural tendency to act positively towards people with epilepsy, thereby producing a conative change.

Previous research into the effectiveness of basically informative programs have shown mixed results. Studies have not always had information as an isolated variable and the information element is difficult to isolate from the personality of the presenter and the nature of the recipients of the information. Two studies, Forader (1970) and Perkins Karniski (1978) did isolate information to a relatively large extent, with differing conclusions. Forader assessed the attitudinal effects on high school students of a single, factual, educational communication by a non-disabled presenter using live, video, and audio programs. Results indicated no significant modification of attitudes with any of the presentations (McKerracher, 1982, p. 6). On the other hand, Perkins Karniski

found that increased knowledge of the physically disabled significantly improved the attitudes of 6th grade children toward the disabled (McKerracher, 1982, p.6).

McKerracher also points out that factual knowledge of disabilities may increase awareness of the differences between the disabled and non-disabled rather than resulting in improved attitudes based on the knowledge that persons with disabilities have most things in common with the non-disabled. Therefore the presentation used in this research study aimed at providing information about epilepsy, while at the same time stressing that children with epilepsy are just like any other children in most ways and they like to be treated like other children, not to be made to feel different or strange.

Following the views of Lewin (1946) and Evans (1976) discussed earlier - that it is possible to modify attitudes by unfreezing a present attitude by producing a restraining force or increasing a driving force - it was hoped to present a positive, realistic view of people with epilepsy while at the same time counteract or restrain false impressions or information that the children might have.

Donaldson has also suggested that improved attitudes can be produced in a relatively short period of time without the opportunity for personal relationships between disabled and non-disabled individuals to develop (1980, p.507). Evidence for this suggestion is found in the significant positive shifts in attitude produced by 45 minute live and videotaped presentations of disabled people (Donaldson and Martinson, 1977); by the structured personal interview between a disabled and non-disabled person (Evans, 1976); and by brief exposures to disabled persons noted in the study by Langer, *et al.* (McKerracher, 1982, p. 5). Audiovisual media has been effective at changing attitudes because of its well-proven and powerful ability to influence emotions as well as to convey information (Treiman-Tokunow and Treiman, 1982, p. 467). In addition, audiovisual productions are an obvious means of communicating with children and other people who have low-level reading skills.

Based on Donaldson's research findings into studies which have succeeded in changing attiitudes, an audiovisual program presenting three children with differerent sorts of epilepsy , but of similar age and status to the viewers ,was made the central focus of the teaching package in this

research project. The development of this audiovisual presentation is discussed more fully in Chapter 4 (Section 4.4). By means of the visual presentation, the children were given a strong positive image to counteract any negative feelings they might have, they were allowed to stare, or look closely at a person with epilepsy without appearing rude, and they were able to identify with children their own age, who had epilepsy. The audiovisual presentation was followed by a structured discussion, in which the children gained more information and were encouraged to ask questions. They were encouraged to express how they thought they might feel if they had epilepsy and what they could do to help a person with epilepsy. It was hypothesized that children would gain knowledge about the condition of epilepsy, what it was like to have epilepsy and how they might be expected to react to someone with epilepsy, thereby relieving them of strain and discomfort should they encounter someone with epilepsy in real life.

In the post-audiovisual discussion, further information was given about first aid procedures for the grand mal type of seizure and children were allowed to role play the procedure. It was decided to use a role play activity, based on studies into the effectiveness of simulation activities. Clore and Jeffrey (1972) found that persons who role played disability and those who observed role playing of disability developed significantly more positive attitudes toward the disabled than did those in a control group (McKerracher, 1982, p. 7). It was considered important that the role play allow the role player to observe reactions of non-disabled persons, and this was allowed for in the present research study by having the role player discuss what s/he felt like when s/he saw the reactions of classmates. Clore and Jeffrey concluded that role playing, both actual and vicarious, resulted in increased mutual understanding and attraction, which they attributed to an empathetic response (McKerracher, 1982, p. 7).

The effectiveness of the teaching package (the audiovisual presentation, follow up activities and questionnaire) developed for this project will be evaluated in Chapter 6.

3.3 Summary:

It has been argued that there is a need for non-disabled children to understand and appreciate the disabled and thereby improve their attitudes towards them. This should be done before the

before the adolescent years when attitudes are less easily changed. Epilepsy has been selected as the target topic in this research because of the history of stigmatism and prejudice associated with epilepsy and people who have it, plus the misinformation that surrounds it. Attitude change was attempted through an educational program based on knowledge about the condition of epilepsy using children with epilepsy as case studies, in an effort to effect both the knowledge base (cognitive element) and the emotional aspect (affective element) of attitude development. The program aimed at reducing strain and discomfort of the non-disabled when encountering a person with epilepsy.

CHAPTER 4:

RESEARCH DESIGN AND METHODOLOGY

The research design and methodology used in the epilepsy project will be discussed here, elaborating the overview given in Chapter 1. It should be re-called that in addition to the pre- and post-test design used in the funded project, an additional research component was introduced at the end of the project: the attitude scale towards people with epilepsy (ATPE). The development of the teaching package used in the intervention will also be described. A critical evaluation of the entire reseach design, methodology and teaching package will be found in Chapter 6.

4.1 Experimental Research Design

The most popular experimental design in the field of attitude change has been the before-after design, involving an experimental and a control group (Insko, 1967, p. 3). The experimental group receives a pre-test, an experimental intervention, and then a post-test; the control group receives the pre-test and post-test, without the intervention. Subjects are either randomly assigned to the two groups or matched on some prearranged basis. The results are typically analysed by comparing the difference between the pre-test and post-test in the experimental group with comparable differences in the control group. A more sophisticated analysis is done by using the analysis of covariance to eliminate that portion of the variance which is attibutable to the pre-test (Insko, 1967, p. 3).

In the research focussed on in this thesis a pre- and post-test design, as seen in Table 4.1, was used to evaluate children's knowledge of epilepsy, and a post-test only (attitude scale) was used to assess attitude change. There was a modification to the typical design, however, based on the work of Solomon (1949) who noted that the main difficulty with the pre- and post-test design is the possiblity of an interaction between the pre-test and the experimental manipulation, in other words, differences between the experimental and control groups may be due to the experimental manipulation and the pre-test (Insko, 1967, p. 3); the pre-test may commit the subjects to their initial positions and make the experimental communication less persuasive, it may sensitise subjects to the issue and make the experimental communication more persuasive , or it may affect the

post-scores of the Control group, by raising their awareness of the issues tested. To see if the Control group's scores were influenced by the questionnaire the category called New schools was introduced, who were given the post-test, but not the pre-test. Finally, at the end of the period of the experiment, a Likert-style attitude scale test was administered to Project and Control schools to assess their attitudes towards people with epilepsy and this same scale was also administered to a group of Attitude schools, as a further means of comparison. The attitudes of children in the Attitude schools were 'uncontaminated' in the sense that they were given the Likert-style attitude test without having been exposed to the audiovisual material, the lesson on epilepsy, or even the knowledge-based questionnaire on epilepsy. However, for both educational and ethical reasons these children were presented with the teaching package on epilepsy after their attitude tests were completed, even though this was not part of the research design. Also Control and New schools received the teaching package after the research program was completed, again not as a necessary part of the research design, but to avoid them being left with unanswered questions which might have affected them negatively.

Table 4.1:
Expanded Research Design for Epilepsy Project

School Research Categories	Questionnaire on Epilepsy (Term 1)	Teaching Package on Epilepsy (Term 1)	Questionnaire on Epilepsy (Term 3)	Attitude Test Assessment (Term 3)
Project Schools (6)	X	X	X	X
Control Schools (6)	X		X	X
New School (6)			X	
Attitude Schools (6)				X

Project Schools: A questionnaire about epilepsy was administered, together with a teaching package on epilepsy. The same questionnaire was re-administered six months later.

Control Schools: A questionnaire on epilepsy was administered at six month intervals, with no intervening teaching about epilepsy.

New Schools: The questionnaire on epilepsy administered at final stage to determine whether questionnaire given to Control Schools might have influenced the students' scores on the post-test.

Attitude Schools: Students in these schools (in addition to the Project and Control groups) were given the attitude test to try to assess changes in attitudes.

In order to avoid any interaction between the children in the Project group which might allow them to share false information or transfer negative ideas, the classroom intervention (teaching package on epilepsy) was administered immediately after the pre-test questionnaire, with no intervening discussion. It was noted by McKerracher that in almost all of the experimental studies on changing attitudes towards the disabled, the post-test is given soon after the intervention program is finished and therefore persistence of the attitude over time is not recorded (1982, p. 8). In the epilepsy research study, it was decided to post-test after six months to determine the long-term effect of the teaching package and also to assess attiitudes at that time. There was no post-test immediately following the presentation of the teaching package to determine knowledge acquisition after the intervention.

4.2 Methodology

(1) *Population:* The population used in the epilepsy research study consisted of Grade 5 students in Tasmanian government primary schools, excluding schools with less than forty children in Grade 5 class(es) and classes in which any of the pupils was known to have epilepsy. A total of 3,804 children formed this population. Intact classes from schools randomly chosen from the three

main geographic regions of Tasmania (Figure 4.1) and from differing socio-economic groups were selected. The socio-economic groups were determined by an index devised by the Education Department of Tasmania, using Collector's Districts and based on over thirty items of information from the 1981 Census. The sample population for Project, Control, New Schools and Attitude schools is shown here in Table 4.2(a) and 4.2(b).

Figure 4.1:

Map of Tasmania indicating the three main geographic regions

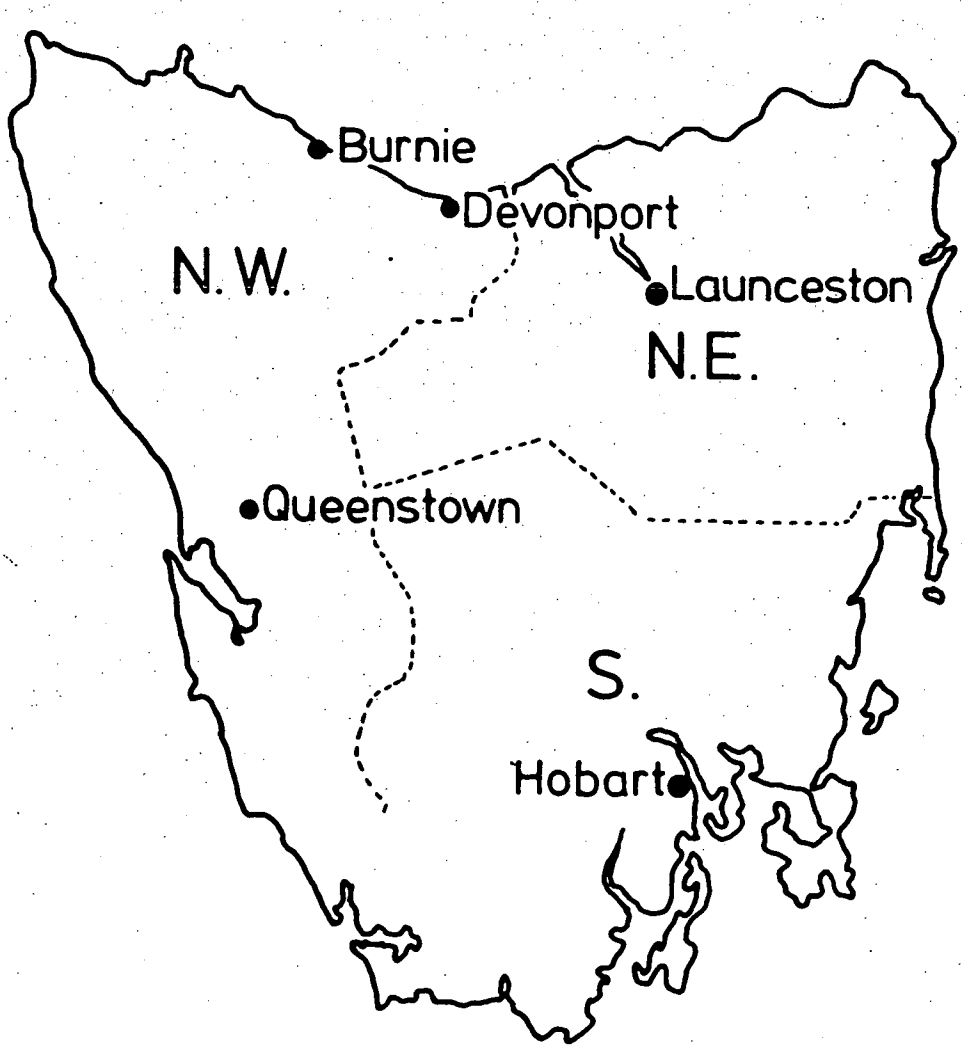


Table 4.2 (a)

Number of Children by Geographic Region, Socio-economic Status and Research Category

Region	Project Schools			Control Schools			New Schools			Totals
SES	Low	Medium	High	Low	Medium	High	Low	Medium	High	
Northwest	-	40	-	-	25	25	-	100	-	100
North	25	43	-	59	48	-	-	39	19	233
South	32	39	73	29	42	-	102	-	-	327
	57			88			102			247 Low
		122			115			139		376Medium
			73			25			19	117 High
										740 Total

Table 4.2(b): Population Receiving Attitude Scale

Project Schools	Control Schools	Attitude Schools	Total
23	208	203*	642 [SES: High=74 Medium=72 Low=57]

*It was unnecessary to include regions of Tasmania as a variable for Attitude schools, primarily because the main interest was in differences between the various research categories rather than differences within them.

4.3 Measurement Instruments

(a) Knowledge-based Epilepsy Questionnaire

A questionnaire containing seven multiple choice questions was devised to determine the children's basic knowledge about epilepsy (see Appendix I) and was used as both the pre-test and post-test instrument. The questions asked covered information presented in the teaching package, specifically information contained in the 10-minute video presentation. In addition, children were asked to tick a box to indicate whether or not they knew anyone with epilepsy. If they did, they were to write in who it was, not a specific name but, for example, a friend, relative, neighbour.

This was to check whether those children who knew someone with epilepsy had more knowledge of the condition. After trialling and use in the research project, the questionnaire was later included as part of the teaching package.

A brief standard statement about epilepsy preceded the actual questions on the questionnaire and the children were instructed to answer the questions by ticking the appropriate boxes only after the questions had been read aloud to them one at a time by the presenter, who was the same person on all occasions. Students were placed in test conditions to minimise comparisons between answers. As mentioned previously, the instructional intervention immediately followed the questionnaire in Project schools.

(b) **Attitude Measurement Questionnaire:**

Instruments for measuring attitudes towards the disabled have included the Attitude Toward Disabled Persons scale or ATDP (Yuker, Block and Younng, 1966), the semantic differential scales (Rapier, *et al.*, 1972), preference rankings for pictures of physically disabled children (Richardson, 1972) and a variety of behavioural measures (Langer e*t al.*, 1976). No measure has been universally accepted (McKerracher, 1982, p. 3). However, Shaw and Wright (1967) did an extensive study of scales for the measurement of attitudes and indicated that the ATDP, which attempts to measure the extent to which respondents perceive the disabled as different and to some extent inferior and disadvantaged, had better supporting data than most scales and was adequate for research purposes. Using the ATDP for the first time with children, Lazar *et al.* concluded that it was effective and valuable for measuring attitudes of young gifted children towards the disabled (1971, p. 602).

It was decided to modify the ATDP scale for use in this epilepsy research study. The ATDP scale is a Likert-type scale containing 20 items. Respondents have to indicate the extent of their agreement with each item by ticking one of six boxes, ranging from 'disagree very much' to 'agree very much'. McKerracher successfully used the scale with Year 7 children in his study of attitudes towards the physically disabled (1982, p. 12) and it was therefore considered suitable for modification and use with the younger children in the epilepsy project to measure the extent they

considered children with epilepsy to be different or in need of special consideration. A high score would indicate a positive attitude, a low score a negative attitude.

The ATDP scale used by McKerracher and the Attitude Toward People with Epilepsy (ATPE) scales are found in Appendices II and III. The ATPE scale contains sixteen questions and these questions focus specifically on epilepsy rather than disabilities in general. The language is suitable for Grade 5 children and the number of choices has been reduced to four, perhaps lacking the refinement of the ATDP scale, but making the respondents' task easier, which was considered worthwhile, given the age of the group being tested (ten years old).

The ATPE was administered after the post-test questionnaire with the Project and Control groups, and Attitude schools were also given the ATPE at this period of time. Children were not required to put their names on the questionnaires so that they might answer more honestly. The presenter (the same person in all cases) explained the procedure, read a sample question, then read the questions one at a time and the children ticked their selected boxes. There was also a box to tick to indicate whether they knew someone with epilepsy or not.

4.4 Development of the Teaching Package on Epilepsy

(a) Audiovisual Presentation:

Based on research noted in the previous chapter, an informative visual presentation about epilepsy which would be suitable for primary school children was sought. In the absence of Australian material, a suitable audiovisual presentation was acquired from the University of Minnesota Comprehensive Epilepsy Program, where it had been found relevant and useful to teachers' needs in North America, as documented by Sister Vivia Walton (1979, pp.16-19). The presentation, which used slides with a synchronised taped commentary, depicted three case studies of young people with different types of epilepsy, and met the recommendations noted earlier by Donaldson (1980): it presented what it was like to have epilepsy; what individuals with epilepsy were like, especially individuals of the same age as the children watching the presentation; and how

people might be expected to relate to them.

It was considered necessary to adapt the presentation for Australian children and after consultation with teachers, authorities in special education, and members of the Tasmanian Epilepsy Association, and with the assistance of the University of Tasmania's Centre for Education, changes were made to the University of Minnesota program. Specifically, one of the the young people in the case studies (a mature looking high school student) was replaced by a younger student or more equal status to the children who would be viewing the presentation; one sequence demonstrating how the brain receives messages from electrical impulses from the nerves (depicted by two children throwing a ball) was omitted to avoid an information over-load; and the narration was presented by an Australian reader rather than an American, in order to be more culturally relevant. In addition, the word 'handicap', which occurred frequently in the American version, was replaced by 'disability' to meet the recommendation of disabled group associations who now use the term 'disability' to refer to the reduction or loss of physical (i.e. motor, sensory or mental) structure or function and 'handicap' to include the personal, environmental and social consequences of a disability (Warren, 1986, p.15). Trials were made using the revised material and then, with the assistance of the Education Department of Tasmania, the slide presentation was transferred to videotape for ease of use. Three coloured photographs of the children in the videotape program were made to use in class discussion and a Teacher's Guide was written.

(b) **Lesson Plan**:

The teaching package (video, discussion, role play) used in the forty-five minute intervention, was presented according to a set plan as follows:

(1) Administration of the pre-intervention questionnaire;

(2) Before being shown the videotape, children were shown photos of the three children in the videotape who are shown with other children, and asked whether they could identify the child with epilepsy? [Various guesses are made, but the children do not really know and it transpires that the children with epilepsy look and act like any other children, their disability is 'hidden'];

(3) Videotape is shown (10 minutes);

(4) Discussion covering: epilepsy as a 'hidden disability', its causes, and the word 'seizure'; what people with epilepsy can do to help themselves [take medicine which helps, but does not cure the epilepsy]; what some things people with epilepsy should not do [swim alone, climb high trees, forget their medication]; what the children would do to help in the case of each of those children shown in the videotape; what those children with epilepsy might feel like; and how they might want to be treated by other children.

(5) Structured role play: Children participated in putting one of their classmates into the recovery position necessary after a grand mal seizure and discussion was held stressing that nothing should be put into the person's mouth and that it was impossible for anyone to swallow his/her tongue.

(6) Questions: Children were encouraged to ask questions based on the points covered in the video and discussion and those involved in the role play were asked how they felt.

(7) Follow-up activity: Children were left with a set of activities to complete during the week of the intervention (see Appendix IV).

(c) Teacher and Student Involvement

Teachers were interviewed before presenting the questionnaire and/or the intervention to determine their level of knowledge about epilepsy and first aid procedures. Teachers were also asked to assess the questionnaire and teaching package in a subsequent questionnaire (see Appendix V for Teacher Questionnaire), but were requested not to teach further lessons about epilepsy before the children were post-tested six months after the intervention.

At various stages of the study, students in classes not participating in the project were interviewed to assess (l) their basic knowledge about epilepsy; (2) their understanding of the epilepsy questionnaire; and (3) their reactions to the visual presentation.

4.5 Follow-Up Lesson for Children in Control, New and Attitude Schools

As mentioned earlier, it was considered important to follow-up the epilepsy post-test questionnaire and attitude questionnaire in non-Project School groups with the teaching package on epilepsy. Otherwise, children would have been left with no knowledge base, having been asked questions about epilepsy and people with epilepsy. Therefore the set lesson was presented to children in Control, New and Attitude schools immediately following the final questionnaires.

4.6 Summary

The experimental design, research methodology, and development of the teaching package used in the epilepsy project has been discussed in this chapter, elaborating the research carried out. It is now appropriate to account for the results of the pre and post-tests and the attitude questionnaire.

CHAPTER 5:

RESULTS OF RESEARCH AND DISCUSSION

This chapter will detail and discuss results of the knowledge-based pre- and post-tests, the interviews with teachers and children and the follow-up work done by the children; results of the attitude scale will be given, as well as the teachers' evaluation of the teaching package.

5.1 Results of the Pre-test and Post-test Information-based Questionnaires

(a) Overall Results:

There are many different ways in which the data from this study could be analysed. For example, the difference between pre and post-test scores could be analysed in detail for differences between socio-economic status, sex, regions, or between individual schools. However, the focus of this thesis is on the relationship between the knowledge and attitude scores and the influence of the teaching package; in other words the emphasis here is on the differences between the groups (research categories) rather than the differences within the groups.

It should be noted in passing, however, that the *Health Education on Epilepsy* report (Mudge *et al.*, 1986) contains information on these and other control variables. That report noted that there were no significant differences between socio-economic groups or between males and females in the pre- and post-scores, nor in their increase in score ('gain') between the two tests (Mudge *et al.*, p. 14). However, in some cases there were significant differences between regions of Tasmania . For example, the South scored significantly higher in gain from pre to post-score than did the Northwest and North ($p=0.004$). There were also significant differences in mean pre- and post-scores between individual schools There would have to be further study of the individual schools to explain these differences. One school, for example, in which the students scored particularly high had a child with epilepsy in the class the year previous to the intervention.

The mean pre- and post-test scores and the mean changes in scores for the different experimental categories, together with the t-values between pairs of results are shown in Tables 5.1(a) and (b). These tables show there were no significant differences in pre-scores amongst the Project and Control groups. However, both Project and Control groups scored significantly higher

on the post-questionnaire (p=<.001) and Project groups scored significantly higher than did the Control groups with respect to both score on the post-questionnaire (p=<.001) (<0.0005) and on gain (p<.0005). The mean scores of children in the Control Schools were not significantly higher than the post-scores of the New group, indicating that the questionnaire given to the Control group did not significantly affect their post-test scores.

Table 5.1(a):
Mean Pre- and Post-Questionnaire Scores and Mean Gain by Research Category
(Maximum score = 7)

Category	Pre- Score		Post -Score		Gain	
	Mean	N	Mean	N	Mean	N
Project	3.270	252	5.009	234	1.739	234
Control	3.333	228	3.764	208	0.409	208
New	-	-	3.823	260	-	-
			[N = 740]			

Table 5.1(b):
Statististical Significance of Category Pairs

Category Pair (Pre- and Post Test)	t-values	Degrees of Freedom	Probability
Pre-test: Control-Project	- 0.46	454	NSD
Post-test: Control-Project	8.77	440	.000

Table 5.2 indicates the number of children who said they knew someone with epilepsy when asked on the pre-questionnaire and when asked again on the post-questionnaire. Children also nominated who it was they knew, for example, a relative, friend, neighbour. There was an increase in numbers who said they knew someone with epilepsy in the post-questionnaire in both the Project and Control groups, perhaps indicating interaction after the pre-questionnaire was administered.

Taking only the 80 children who said they knew someone with epilepsy as a sample and correlating this with their score on the pre-test showed that their scores were significantly higher

than those children who did not know anyone with epilepsy (t-value =-2.94; p=.003). This indicated that pre-knowledge of someone with epilepsy pre-disposed children to know more about it.

Table 5.2:
Pre-Knowledge of Someone with Epilepsy by Research Category

Category	Pre-Knowledge on Pre- Questionnaire		Pre-Knowledge on Post-Questionnaire		Don't Know
	Yes	No	Yes	No	
Project	31	221	57	177	18
Control	49	179	74	134	20
New	-	-	45	215	
Totals	80	400	176	526	38

(b) Results for individual questions by research category

Individual questions were analysed here to determine the percentages of children in each research category selecting the correct answer and to examine the mostly commonly chosen incorrect answer. This analysis helps to indicate any shortcomings in the questionnaire and the intervention and to see where children are possibly becoming confused. A more detailed account of each question can be found in Appendix VI.

Question 1: People with epilepsy have seizures when...

* something frightens them.
* they get an electric shock.
* the electricity in their brain gets briefly out of control.
* they try to do too many things at one time.

Responses:

	Per cent with Correct Answer		
	Project	Control	New
Pre-test	61	69	N.A.
Post-test	92	76	75

In the Project group, 61 per cent of children and 69 per cent in the Control group gave the correct response, that the electricity in their brain gets briefly out of control. The most common

wrong answer was "when they try to do too many things at one time". On the post-test, 92 per cent of children in the Project group answered this correctly, compared to 76 per cent in the Control group. The most common wrong answer remained the same. Of New school children 75 per cent answered this question correctly, the most common wrong answer was the same as the Project and Control groups. The increased percentage in the Project group indicates that the informative intervention was successful in associating epilepsy with uncontrolled electrical charges in the brain, however, a considerable percentage in all groups knew this on the pre-test. This may indicate a poor set of questions, making the alternative answers stand out too much.

Question 2: If a person with epilepsy looks blank or a bit lost for a few seconds, the best thing to do is...

* wait until he recovers, then offer friendly help
* run quickly and call a doctor.
* give him a good hard shake to 'wake him up'.
* get away from him or he might hurt you.

Responses:

	Percentage with Correct Answer		
	Project	Control	New
Pre-test	18	23	N.A.
Post-test	44	20	27

On the pre-test only 18 per cent of the children in the Project groups and 23 per cent in the Control groups answered correctly, "wait until he recovers, then offer friendly help". The most frequent response was "run quickly and call a doctor". On the post-test, 44 per cent of children in the Project group responded correctly, whereas only 20 per cent of the Control and 27 per cent in the New group responded correctly. The most common wrong answer for the Project group (36 per cent) was "get away from him or he might hurt you", but for the Control and New groups, children chose "run quickly and call a doctor" as their most frequently chosen wrong answer, with 31 per cent and 49 per cent respectively. The 26 per cent improvement in the Project schools, retained over a six month period, indicates the children saw no urgent need to call a doctor or to shake the person having a seizure, both which was mentioned in the lesson on epilepsy as being unnecessary, but the fact that many (36 per cent) chose to get away or the person might hurt you suggests that further work needs to be done to allay the fears of children about being hurt by

someone with epilepsy. It was mentioned in the lesson that a person with epilepsy would not physically hurt anyone during a seizure and mustn't be left alone, but these points obviously need reinforcing.

Question 3: If, during a seizure, a person who has epilepsy falls down shaking and jerking, the best thing to do it...

* try and stop him from shaking by holding him down.
* move things out of his way so that he won't bump into them and get hurt.
* jam something like a finger or a spoon into his mouth.
* try to give him something to drink right away.

Responses

	Per cent with Correct Answer		
	Project	Control	New
Pre-test	42	35	N.A.
Post-test	81	40	29

On the pre-test, 42 per cent of children in the Project group and 35 per cent in the Control group answered correctly that the best thing to do is to "move things out of his way so that he won't bump into them and get hurt". The most frequent wrong response was to "try and stop him from shaking by holding him down" which was selected by 25 per cent of children in the Project group and 32 per cent in the Control group. On the post-test, 81 per cent of children in the Project group responded correctly, compared with 40 per cent in the Control group and 29 per cent in the New group. The most popular wrong answer for the Project group (13 per cent) and the Control group (40 per cent) was to "jam something like your finger or a spoon into his mouth", but for the New group, the most popular wrong answer (42 per cent) was to "try and stop him from shaking by holding him down".

The vast improvement by the Project group (39 per cent increase) indicates the success of the intervention in getting children to move things so the person having a seizure won't injure himself, rather than to try and hold the person down or jam something in the mouth.

Question 4: AFTER a person has had a seizure where he fell down shaking and jerking, it is best to...

* force him to eat something.
* get him up to have some exercise.
* push something into his mouth so that he won't swallow his tongue.
* turn him on his side and allow him to rest.

Responses:

	Percentage with Correct Answer		
	Project	Control	New
Pre-test	46	50	N.A.
Post-test	69	43	50

On the pre-test, 46 per cent of children in the Project group and 50 per cent in the Control group selected the correct answer, "turn him on his side and allow him to rest", with "push something into his mouth so that he won't swallow his tongue", the most frequent wrong answer (48 per cent for Project group children, 42 per cent for Control group children). On the post-test, 69 per cent of Project group children selected the correct answer, compared to 43 per cent for the Control group and 42 per cent for the New group. The most frequent wrong answer for all groups was "push something into his mouth so that he won't swallow his tongue", 29 per cent, 53 per cent and 42 per cent respectively, for Project, Control and New groups. It is clear that children are under the impression that the tongue can be swallowed and that something should be pushed into the mouth to prevent this, although the Project group clearly made improvements on the post-test.

Question 5: Which one of these is true of people having a seizure?

* They are aware of what is happening to them.
* They cannot do anything about it.
* They can stop the seizure if they try.
* They can talk to you.

Responses

	Percentage with Correct Answer		
	Project	Control	New
Pre-test	59	62	N.A.
Post-test	66	66	69

On the pre-test 59 per cent of Project group children selected the correct answer, "They cannot do anything about it", and 62 per cent of the Control group selected this answer as well. The most frequently chosen wrong answer was "They are aware of what is happening to them" for the

Project group (20 per cent) and for the Control group, "They can talk to you" (16 per cent). On the post-test, all groups selected the right answer by close perecentages: 66 per cent for the Project and Control groups and 69 per cent of the New group. The most frequent wrong answer was that "They are aware of what is happening to them", 18 per cent, 12 per cent and 14 per cent respectively for Project, Control and New groups. The fact that there was not much improvement by the Project group and that the New group did even better than the Project group on the post-test indicates that this point was not stressed sufficiently in the teaching material to stick in the childrens' memories or that they simply remembered other things which were more interesting or important to remember.

Question 6: People with epilepsy can take medicine. This medicine

* can always completely cure them.
* isn't much help to most of them.
* usually makes them have fewer seizures.

Responses:

	Per cent with Correct Answer		
	Project	Control	New
Pre-test	62	61	N.A.
Post-test	78	73	75

On the pre-test, 62 per cent of children in the Project group and 61 per cent in the Control group selected the correct response, "usually makes them have fewer seizures", with "isn't much help to most of them" the most frequently chosen incorrect answer. On the post-test, children in all groups had a similar percentage of correct responses, 75 per cent for the Project group, 73 per cent for the Control group and 75 per cent for the New group, with the most common incorrect response the same as on the pre-test. The high percentage of correct answers in all groups may indicate that the question was too easy; also this question had only three possible choices, whereas the other questions had four choices. Again the Project group improved their scores after the intervention, which indicates a measure of success on the part of the intervention.

Question 7: How should you act towards people who have epilepsy?

* mostly treat them the same as anyone else.
* keep away from them so you won't catch it.
* watch out that they don't hurt you.
* give them lots of special attention.

Responses:

	Per cent with Correct Answer		
	Project	Control	New
Pre-test	41	35	N.A.
Post-test	72	59	58

The response desired was "mostly treat them the same as anyone else" and 41 per cent of the Project group children and 35 per cent of the Control group children selected this response on the pre-test. The most frequently chosen alternative as "give them lots of special attention", chosen by 37 per cent of the Project group and 51 per cent of the Control group children. On the post-test, 72 per cent of Project group children chose the desired response, with 59 per cent of the Control group and 58 per cent of the New group children choosing this response as well. The most frequent alternative was to "give them lots of special attention", 22 per cent for Project school children, 32 per cent for Control groups and 35 per cent for New groups.

This question was the one most associated with attitude and a 31 per cent increase by the Project school children is a measure of of how they thought they would behave towards someone with epilepsy after the classroom intervention, which stressed that people with epilepsy like to be treated the same as everyone else (but also mentioned the necessity to give them some assistance when they needed it). It was difficult for the children to choose between mostly treating people with epilepsy the same as anyone else and giving them lots of special attention, which is understandable, given the children were on the whole very sympathetic towards people with epilepsy (see discussion of childrens' written work and drawings in Section (4)).

5.2 Interviews with Teachers and Students

(a) Teacher Interviews

Before the epilepsy teaching package was presented, teachers were interviewed about their knowledge of epilepsy and what they might know of any first aid treatment required. The small number (30) of teachers involved did not allow a quantitative analysis, but the following general information emerged from the interviews.

* Most teachers said they were aware of what epilepsy is, that it has "something to do with the brain", but most had not had anyone with epilepsy in their own classes.

* A few teachers had immediate contact with epilepsy (e.g. one had a father with epilepsy and another a brother with epilepsy). These teachers expressed less worry about the condition and were aware of first aid procedures. Other teachers felt more unsure about what to do and how to cope with a seizure if a child might have one in class.

* Generally, teachers were interested and sympathetic, but not overly concerned with the issue of epilepsy. Perhaps the fact that they did not know anyone with epilepsy or have a child with epilepsy in their classes influenced their attitudes towards the need to teach about it.

* Although teachers indicated that generally they knew about epilepsy, it became clear after the teaching package that many were not aware of the conditions and symptoms referred to in the two less common types of seizures, absence and complex partial. Knowledge of the grand mal seizure, where the person falls down shaking and jerking, was the most common.

(b) Interviews with Children

At various stages in the research project, children in classes not participating in the project were informally interviewed to try to assess (a) their knowledge of epilepsy; (b) their understanding of the epilepsy questionnaire; and (c) their reactions to the audio-visual presentation. The following points of interest arose from talking to individual students:

* The term "fit" (rather than seizure) was sometimes understood but knowledge of what caused a "fit" was very limited. One boy remembered that his next door neighbour collapsed at her letterbox and wondered if that was a fit; others seemed to associate any kind of fainting with fits,

but at no time did any child use the word epilepsy when referring to fits.

* Those who knew the most about fits were those who knew someone who had them, but it was not clear whether the person actually had epilepsy.

* When asked how they felt towards someone who had fits or epilepsy, the children seemed to consider the fits to be less important than how they felt about that person in general. In other words, if they liked the person, the fits were not important. Some who did not know anyone with epilepsy were naturally enough uncertain about their feelings.

* Further probing indicated that children thought someone with fits or epilepsy should be given special attention. When asked if they thought that might make the person feel strange or different, they tended to agree and their opinion changed in the direction of treating that person like anyone else.

* The two most common misconceptions amongst students who thought they knew something about fits were that the person having a fit could swallow his/her tongue and that something should be pushed into the mouth to stop this happening.

* When asked about the questionaire about epilepsy, the children frequently said they enjoyed the questionnaire and wished it were longer; they remarked that they did not know all the answers, although they understood the questions.

* After viewing the videotape, children frequently said they understood everything, but when asked to put their understanding into their own words, they found it difficult. This indicates the need for discussion and follow-up work with the children to reinforce what they have learned and clear up anything they don't understand. Some of the misunderstandings will be noted again in the next section describing the follow-up activities done in the Project Schools.

* When asked why someone like the former English cricket-team captain, Tony Greig, would tell others that he has epilepsy, one child felt that Tony Greig might want others to feel sorry for him; another child said that Tony Greig wanted others to know that people with epilepsy could

achieve as much as those without epilepsy. These responses indicate the possible interpretations children can place on messages about epilepsy and the need to be explicit about the purpose of such messages.

5.3 Results of Follow up Activities in Project Schools

As mentioned earlier, children in the Project groups were given follow up activities to complete during the week of the intervention. The children had to either (1) write a letter to one of the children with epilepsy in the videotape, whose names were Tim, Amy and Lance, and tell them what they learned about them and how they felt about them; or (2) draw a picture of something they learned about epilepsy and write a few lines about what they had drawn; or (3) write a story beginning, "If I had epilepsy, I would want other people to...."; or (4) describe how epilepsy might affect their lives if they had epilepsy. The activity was not assessed in any way, but was meant only as reinforcement. However, teachers were required to send their work to the presenter in order to make sure each child completed an activity.

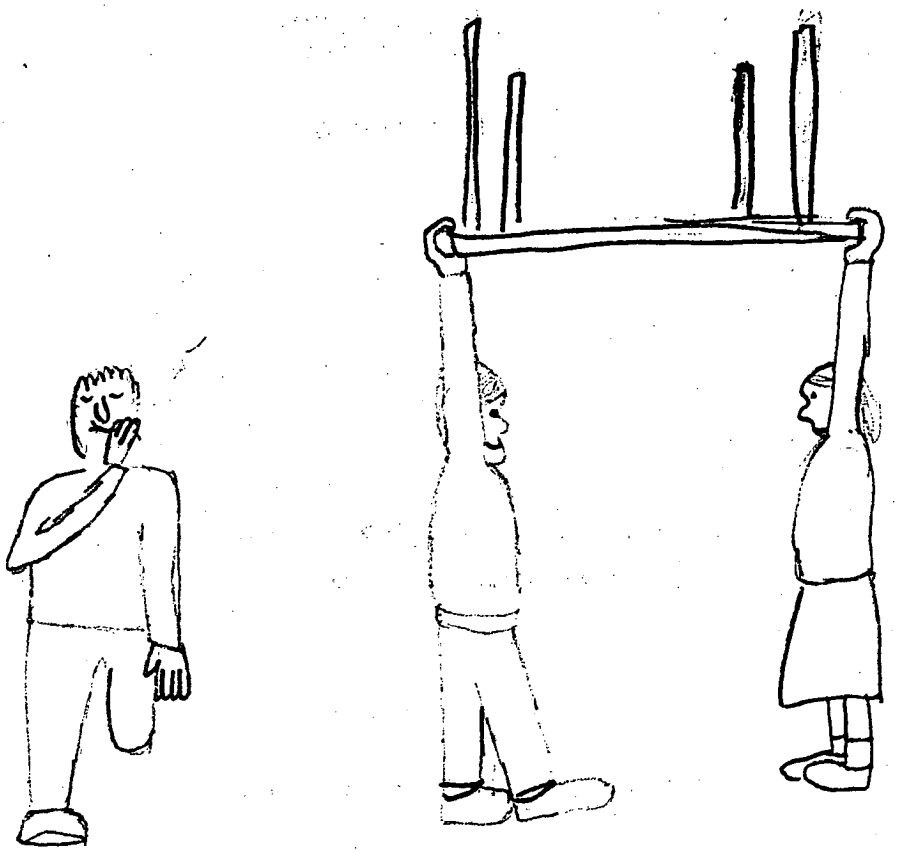
Most of the children chose to either write a letter to one of the children with epilepsy shown in the videotape or to draw a picture. It was often by examining the pictures and reading the children's short essays that the source of misinterpretations became clear. For example, in the lesson on epilepsy describing the partial complex seizure, children were told that the person with epilepsy might wander around unaware of what he/she is doing, and might smack the lips, and in this case, it was best to move any furniture out of their way so the person wouldn't bump into it and get hurt. In the drawing reproduced here (Figure 5.1), it is clear that the child has interpreted smacking the lips as literally hitting them with the hand, and that moving furniture meant holding it up over the head if necessary! The drawing helps to demonstrate exactly how children can construe meanings in quite different ways than expected and the importance of being aware of language, particularly ambiguities in language, in all teaching materials.

Only a small number of the many drawings and written work is reproduced here, but it is possible to see the sensitivity of some of the children and their honesty. For example, in a letter to

Amy one child wrote, "I feel so sorry for you because sometimes you have seizures. But I shouldn't because you are just a normal person" (Figure 5.2); another child wrote, "I learnt alot about epilepsy and I would hate to have it" (Figure 5.3). Some of the drawings show teachers did in fact do some follow up work on their own, for example, in the drawing where 'tonic-clonic' seizure is referred to (Figure 5.4). This term was not mentioned by the presenter; it is interesting that this child also thought that a person having such a seizure might hurt you, which is contrary to what was presented in the lesson.

The pictures and writing exercises were an important adjunct to the questionnaires in determining what the children understood. The questionnaire naturally restricted the information being tested and it was not possible to know the depth of understanding or sources of possible confusion. The drawings and written work show how the children actually felt about the person with epilepsy, see (Figures 5.5 and 5.6) and how that person with epilepsy might feel; in writing to Lance, who had grand mal seizures, one child said, "If I had epilepsy I would be scared (especially if it was like yours). I'd think people wouldn't like me because they'd probably think they could catch it", see (Figure 5.7). Writing a letter helped the children to internalise the information given them and make it personal to themselves. It also gave insights into what the children thought was important or interesting in the lesson. Many drawings indicated a fascination with the brain waves and the patterns of the electroencephalograph, see (Figure 5.8), and many tried to draw a person having a seizure, as in picture (Figure 5.9).

Figure 5.1



If you see anybody having a seizure walking about the room move the furniture out of the way.

Figure 5.2 Answer

ar Amy, My name is Nicole and I
10 years old. I am in Grade
and I go to Bridgewater Prim.
School, it is good fun. My best
ends are Michelle, Kellie, and Belind.
I feel so sorry for you beca-
e Sometimes you have seizures.
I shouldn't really because
are just a normal person.
n the slides that our class
aw, you were in them. They showed
nen your brain go! too much
ctricity in it The slides Mrs
e showed us, were very interesting.
talked about you, Tim and Lance.
was very interesting, we had to fill
a question sheet about epilepsy.
didn't know what epilepsy was, but
ow I do. I have two nice teachers
School. Their names are Mr
ngston and Mrs Wrolley. They are
ally nice.

yours truly

Nicole Kirkby

xx
oo

P.S Please write back.

Figure 5.3

Dear Amy

On Wednesday we watched
me slides of you, Tim and Lance.
e also saw some pictures of you
th another girl. I think the slides
ere good. What is it like to have
ileps y? I Hope you have got a lot
friends who help you and play
ith you? I Learn't a lot about epileps
and I would hate to have it. I am
lad that you are happy when
u ride your bike.

from
Leisa Allchin.

EPILEPSY

This man is having a tonic clonic seizure. You should move everything out of the way or else he might hurt himself and you have to get out of the way or he might hurt you.

Figure 5.4

Figure 5.5

If I had epilepsy I would want every body to know that I had epileps. seizures. I would try to make alot of friends and tell them they could not catch it.
I would like to still do all the things that I do now, like judo, football, running and swimming. Say if I wanted to go on a school camp, I would still want to go no matter what's wrong with me. You would have to go with a friend if you were swimming or clift climbing or a pilot. I would take my tablets every day.
I would tell my friends every thing to do if I have a seizure.
I would want people to move chairs and tables away, or things that I could hurt my self on.

Figure 5.6

If I had EPILEPSY I would Still like to be able to take the dog for a walk be still able t ride my bike go to the pool and bild car models, Ship modle s and plane modles. I would want to live a normal life. Want other people to treat me as if I didn't have epilepsy. Like if I went to the pictures with some friends I would like them to treat me as a normal person not ask me things like would you like me to help you go to the shop to get Some thing like some popcorn and a Drink that is not what I would like. I would like them to treat me as a normal person and I would go with them to buy my Own lolies.

Figure 5.7

Dear Lance,

I watched you and Amy and Tim on Slides and I know how hard it must be when you have seizures. I learned that some people have hidden disabilities and others have disabilities you can see. I know that yours are hidden. I also know that your seizures are quite long. You are pretty brave to put up with such a thing. If I had epilepsy I would be scared (especially if it was like yours) I'd think people wouldn't like me because they'd probably think they could catch it. I wish there was a proper cure for it and you. Then you wouldn't have to put up with seizures. It must be hard when you are swimming and things like that.

Yours

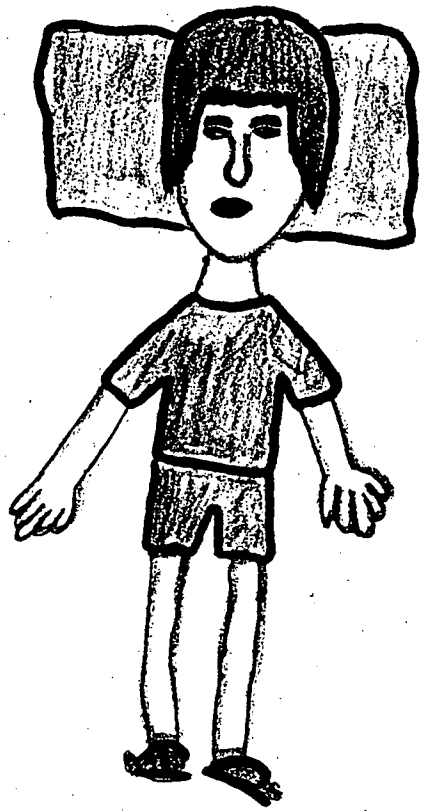
Sincerely

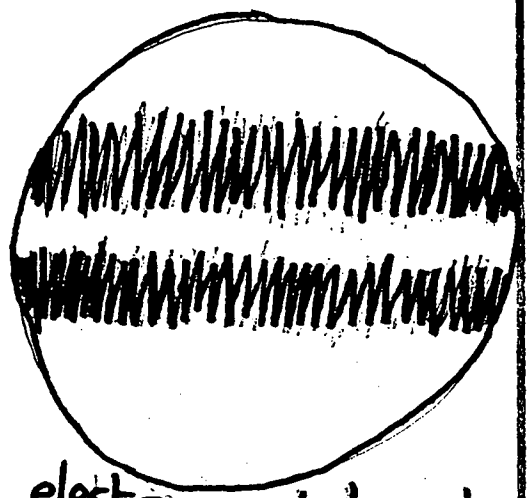
Michelle

xxx

EPILEPSY

Figure 5.3



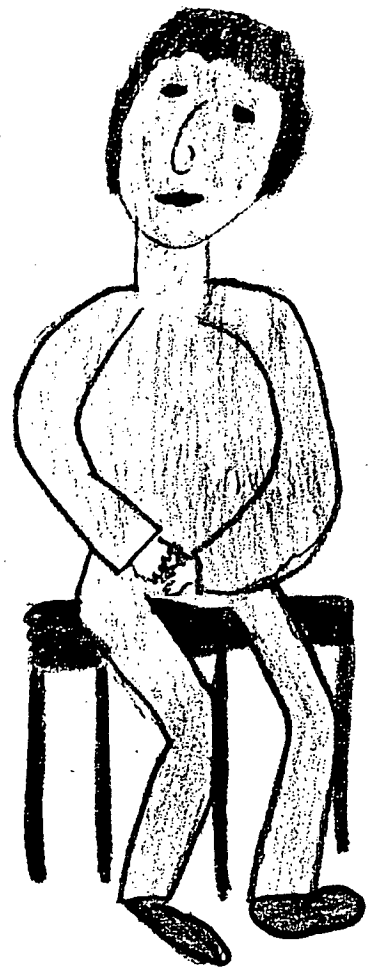


electroencephelograph (E.E.G.)

If someone had a seizure you should never put your finger in their mouth or they will bite you and the best thing to do is move things out of the way so they don't hurt themselves and comfort them. If you have a seizure you should always stay with someone.

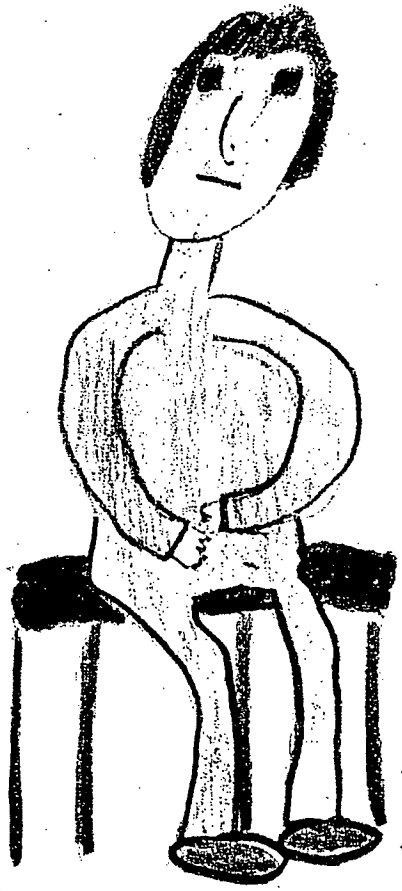
Figure 5.9

Before the Absence



This is a picture of Amy before she has absence. absence is when Amy goes blank and forgets everything that happend in that time. Amy only has absence for a few seconds

Absence



This is a picture of Amy having Absence. Amy just stares. When she has Absence. Sometimes Amy has Absence 100 times a day.

5.4 Results of the Attitude Scale

(a) Overall Results: Six months after the initial information based questionnaire and the intervention, a Likert-type attitude scale was administered to Project and Control groups to measure their attitudes towards people with epilepsy (see Appendix for Attitude Test). In addition six Attitude Schools, who had had no earlier questionnaire and no intervention, were given the attitude scale.

Results of the Attitude Questionnaire and their statistical significance are seen in Tables 5.3(a) and (b). There was no significant difference in scores between males and females, despite the suggestion that females exhibit more positive attitudes towards the disabled than do males (Livneh, 1982). This substantiates the view presented by Donaldson and Martinson, that the sex differences may tend to disappear when males are exposed to disabled persons in a controlled or favourable situation and given information about disabilities (1977).

The differences in mean scores for different categories of schools ranged from 47.69 to 52.0.1. For each pair of school-categories, the differences between the mean scores is statistically significant, as reflected in values for t-tests (Table 5.3(b)). This indicates that the differences in attitude scores between the different schools are real differences, in statistical terms. The gradations in mean scores between the different categories of schools represent gradations in levels of exposure to information about epilepsy (e.g. the Project schools had the most exposure, Control schools had only minimal exposure and the Attitude schools had no exposure); this was also reflected in the knowledge-based questionnaire where the gradations in scores reflected the amount of exposure to information about epilepsy. Thus, it is assumed that the differences are due to the classroom intervention. This reinforces other studies discussed in Chapter 3 that have linked knowledge to attitude when the information is combined with exposure to non-stereotypical people with disabilities, and when role play is part of the intervention.

Table 5.3(a):
Mean Scores on Attitude Scale by Category and by Sex

(Maximum score of 60, the higher the score the more positive the attitude)

Category	Project (N=231)	Control (N=208)	Attitude (N=203)	Total
Females	52.42	49.73	47.97	49.80
Males	51.73	49.71	47.31	49.67
Total	52.01	49.72	47.69	49.73

Table 5.3(b):
Statistical Significance of Category Pairs

Category Pair	t-value	Degrees of Freedom	Probablity (2-tail)
Project-Control	2.80	437	0.005
Project-Attitude	5.33	432	<0.001
Control-Attitude	2.41	409	0.016

An examination of the scores of schools by research category and socio-economic group as seen in Table 5.4(a) and (b) indicates that subjects from schools classified higher in socio-economic status (SES), in general achieved better scores on the attitude questionnaire, confirming Livneh's account that higher income groups show more favourable attitudes toward some categories of disabled people.

Table 5.4(a):
Mean Attitude Scores by Research Category and Socio-Economic Status

Category and SES	**Mean Score**	**Number**
(1) **Project**		
High	55.28	54
Medium	50.56	112
Low	51.78	65
(2) **Control**		
High	50.22	76
Medium	49.98	108
Low	46.96	24
(3) **Attitude**		
High	49.20	74
Medium	48.75	72
Low	44.39	57

Table 5.4(b):
Statistical Analysis of Category and Socio-economic Status Pairs

Category and SES Pairs	t-value	Degrees of Freedom	Probability (2-tail)
(1) **Project**			
High-Medium	3.97	148	0.000
111High-Low	2.62	115	0.010
Medium-Low	- 0.89	175	NSD
(2) **Control**			
High-Medium	0.19	182	NSD
High-Low	1.51	98	NSD
Medium-Low	1.62	130	NSD
(3) **Attitude**			
High-Medium	0.33	144	NSD
High Low	3.52	129	0.001
Medium Low	2.93	127	0.004

Attitude scores indicate that children who knew someone with epilepsy scored significantly higher than those who did not know anyone: t= -3.92, p=<.001, with their mean score at 51.90, compared to a mean of 49.01 for those who did not know anyone with epilepsy.

b) Results on Individual Attitude Statements

Table 5.5 provides the mean scores on individual attitude scale statements, together with the t-values and probability. Although the difference in the mean scores between different categories of schools is statistically significant (Table 5.3(b)), in fact only five of the sixteen individual attitude statements show significant differences between the mean scores for the Project schools and the Control schools. Attitude schools have been included for comparison.

The five statements showing significant differences were:

People with epilepsy are scarey;

People with epilepsy cannot be clever;

You should stay away from people with epilepsy;

Children with epilepsy should be at special schools;

You should leave people with epilepsy alone.

Responses to these five statements showed the greatest difference between the Control and Project groups, indicating that the intervention was successful in influencing attitudes on these issues.

Table 5.5:
Mean Scores on Individual Attitude Statements
(Maximum score of four, with high score indicating positive attitude)

Question	Attitude School	Control School	Project School	T-value*	Probability**
1	1.83	2.17	2.19	0.23	NSD
2	3.18	3.17	3.44	3.07	.002
3	3.22	3.21	3.50	3.38	.001
4	3.10	3.15	3.10	-0.60	NSD
5	3.34	3.28	3.53	2.58	.010
6	3.40	3.48	3.61	1.61	NSD
7	2.74	3.07	3.13	.51	NSD
8	3.08	2.94	3.08	1.32	NSD
9	3.78	3.67	3.66	-0.13	NSD
10	2.62	2.87	3.27	3.60	0.00
11	3.05	3.25	3.45	2.15	0.032
12	3.20	3.21	3.34	1.43	NSD
13	2.95	3.26	3.39	1.24	NSD
14	2.03	2.52	2.60	0.75	NSD
15	3.26	3.22	3.37	1.40	NSD
16	2.97	3.22	3.36	1.24	NSD

* t-values are between Project and Control schools
**Degrees of Freedom = 437 in all cases

5.5 Teachers' Evaluation of the Teaching Package

Teachers were given a questionnaire to evaluate the presentation about epilepsy (see Appendix V). Thirty teachers completed the questionnaire and their responses are summarised here.

(a) Age group for which the material is appropriate ranged from Grades 1-6, but generally it was felt to be appropriate for Grades 4-6.

(b) In response to what new or interesting material was learned from the audiovisual presention, teachers felt they had learned

* to be more confident in helping someone with epilepsy;
* that people with epilepsy do not swallow their tongue (after discussion following the audiovisual presentation);
* not to push anything between the teeth of someone having a seizure and the dangers of putting anything in the person's mouth;
* the use of the word 'seizure' rather than 'fit';
* not to try to stop a seizure once it has begun;
* the idea of a hidden disability;
* information about the'lip smacking and clothes pulling' type of epilepsy and about absence seizures;
* procedures used in first aid for the grand mal seizure.

(c) The presentation was rated 'very good' or 'excellent' by most teachers; no one rated it 'fair' or 'poor'. Specific ratings are seen here in Table 5.6.

Table 5.6:
Teachers' Ratings of the Teaching Package on Epilepsy
(N=30)

	Very High	High	Average	Low	Very Low
1. Clarity of information	20	6	4	0	0
2. Completeness of information	12	13	3	0	0
3. Suitability of material for age level of students	12	17	1	0	0
4. Usefulness of audio-visual medium for the classroom	12	18	0	0	0

(d) Likelihood of using this material themselves: Most teachers said they would use the material themselves; only four said they would not, mainly because they would not choose a unit only on epilepsy. Twelve teachers said they would use it if follow-up material were available.

(e) Knowledge-based questionnaire: In response to how appropriate this questionnaire was for their students, the majority (twenty five out of thirty) teachers said the questionnaire was very appropriate, especially as the students learned the answers during the lesson. A few criticisms were that there should be three alternatives rather than four and that it was too wordy.

(f) Suggestions and comments: Many teachers had comments such as the presentation "was a worthwhile exercise, as children had very little knowledge of the subject" and that "There is a need for teachers and children to be made aware of the first aid procedure for epilepsy".

Based on teachers comments, it was decided worthwhile to turn what was originally a slide/audiotape presentation into a video for greater ease of use and to include the knowledge- based questionnaire as part of the teaching package.

5.6 Summary

This chapter has outlined the main results of the research project. Results on both the knowledge based questionnaire and the attitude scale showed that after a six month time lapse, children in the Project schools who had the intervention (teaching package on epilepsy) had higher scores on both knowledge and attitude than did the Control group. Children in the category called New school, having only the knowledge questionnaire at the end of the project, did not score significantly higher than the Control group post-tested on the knowledge-based questionnaire at the same time, thus indicating that the questionnaire had no effect on Control group post-test scores. On the Attitude scale, given at the end of the project, the group of Attitude schools who had no intervention or previous knowledge based questionniare had the lowest mean scores. On both the knowledge based and attitude tests, children who knew someone with epilepsy scored significantly higher.

Teacher and student interviews indicated a lack of knowledge about epilepsy, its causes and first aid procedures. It was clear through their comments and their written and art work that children had internalised and personalised the information presented to them, but that further follow up was necessary for them to consolidate many of the new ideas that had been presented to them. Teachers rated the presentation highly and considered it useful.

CHAPTER 6:

EVALUATION

This chapter presents an evaluation of the research design, the teaching package and contains recommendations for further research.

6.1 The Research Design

(a) Experimental Model:

As has been mentioned in the discussion of the experimental design in Chapter 5, the main drawback experimentally in such a design as the one used in this study is the possibility of interaction between pre-test and the intervention. In order to assess this, the category of New schools was introduced to measure whether there was interaction in the Control group between the pre and post-test. There was no significant difference between the post-test scores of the Control group and the first time tested scores of the New group of schools, indicating that the Control group was not influenced by the pre-test questionnaire. From the results of the post-test, it is clear that the control group had learned nothing that was tested about epilepsy through having had a pre-test six months earlier. This is reflected in the fact that their scores were not significantly different from those in the New School category who were being tested for the first time.

There is still the problem of whether the Project group had any interaction between their pre-test and the intervention. An improvement in the design could have been to adopt a 'post-test-only control group design', commonly referred to as an after-only design (Campbell, 1957). The design involves two randomly selected groups of subjects, one of which receives an intervention and then a post-test, and one of which receives only the post-test. The effect of the intervention is assessed through comparison of the post-test scores for the different groups. This design has the advantage of controlling for everything the before-after design does, and in addition, does not allow for interaction between the pre-test and the intervention (Insko, 1967, p. 5). It of course does not offer comparison between pre and post-test scores to measure a shift in knowledge or attitude but if the groups were initially randomly constituted, then appropriate tests of significance will allow legitimate conclusions to be drawn using this design. If errors of variance are still a concern, the

size of the sample can be increased to a point at which the small difference between the two groups in the after-only design becomes statistically reliable. The New schools could have been retained for post-testing to see if the Control groups interacted with the pre-test. As well as providing a more accurate, non-interactive measure, this design would have saved quite a bit of time, and therefore money.

(b) **Population and Characteristics of Children Surveyed:**

Other improvements could have been implemented in the selection of the population to be surveyed and the identification of individual characteristics of the children surveyed. Firstly, as to the population surveyed, it was considered important to test for regional differences, however, because Tasmania's three main regions are all relatively heterogeneous, it is more likely that there are greater differences within the regions than between them. It would be more useful to eliminate the test for regional differences and concentrate on differences between, for example, rural and urban areas, ethnic groups, and differing socio-economic groups. Secondly, based on the research noted by Livneh in Chapter 2, it would seem important to take more notice of the personality characteristics of the respondents than just their age, sex, socio-economic area of their school and whether they knew someone with epilepsy. Other important aspects such as their intelligence, aggression and anxiety levels, authoritarian and ethnocentric attitudes, self concept , and even their associations with other disabilities, might have been determined. This would have necessitated close cooperation with the teachers involved, but would have provided important data which could have been correlated with scores.

Finally, experimental models such as the one used in this research consume much time and money and one must ask if it is all worthwhile. Could the same result have been achieved quicker and easier? Given the heterogenous nature of Tasmania, it would seem unnecessary to regionalise the sample and this would have saved quite a lot of travel. At the same time it would not have

allowed children in distant geographical areas to be exposed to the teaching package. In the long run, value for money was achieved by spreading the information as widely as possible, but this may not have been necessary as far as the research experiment was concerned.

(c) Measurement instruments: Questionnaires

Generally the questionnaires were effective in measuring what was intended, retention of specific aspects of knowledge about epilepsy and attitudes. The knowledge-based questionnaire was worded as simply as possible, but it was often difficult to provide choices which would not give the answer away. It was suspected that the attitude scale questionnaire might have been too lengthy for Grade 5 children, but there were no complaints, other than a few questions about interpretation of the statements. Further tests into the reliability and validity of both questionnaires could be undertaken to determine their success as measuring instruments.

It would have been of interest to correlate individual children's scores on the knowledge-based questionnaire with scores on the attitude scale but this was not done. In an effort to get honest answers from the children, it was decided not to ask them to put their names on the attitude questionnaire, thereby eliminating any possibility of correlating individual scores.

6.2 Teaching Package on Epilepsy

The teaching package on epilepsy was put to a rigorous test in over 36 primary schools (including pilot schools). It received favourable comments both from teachers and from the children who viewed it, and, based on the improvement in scores of children in the Project schools, it did substantially improve specific knowledge of epilepsy and attitudes towards people with epilepsy, specifically increasing children's awareness that people with epilepsy are not scarey, that they can be clever, that you should not stay away from them or leave them alone just because they have epilepsy, and that they need not always attend special schools.

What could be done to improve the teaching package? The questionnaires are useful in isolating areas for improvement in teaching about epilepsy. For example, in question 2 of the

knowledge-based questionnaire, which asked what is the best thing to do if a person with epilepsy looks blank or a bit lost for a few seconds, only 44 per cent of the Project Schools got the correct answer after the intervention. This indicates that more emphasis and reinforcement is needed for the children to understand about absence seizures. Also, it was noted that responses to five attitude statements particularly improved after the teaching package, as shown by the significant difference in pre- and post-scores. It would now be possible to refine the materials to focus on the other attitude statements and the areas of knowledge that could lead to their improvement.

6. 3 Further Research

Reservation should perhaps be expressed that one person carried out so much of this research, e.g. designing the questionnaire, producing the educational material, administering the pre and post-tests, delivering the planned lesson, and analysing the data. Criticisms might be made that the material is useful only when presented by this one person, but in the hands of others, may produce differing results. It is recommended that further research could now be taken to measure the effect of the teaching package when used by classroom teachers themselves, rather than presented by an outsider.

Further research is also required to determine whether measures to produce more positive attitudes toward disabled persons result in subsequent behaviour change, the conative aspect, or have long term effects. Behaviour modification is difficult to measure in regard to people with epilepsy unless the children have an actual encounter with such a person. It may be that ticking a box to indicate how one would act in a hypothetical situation, e.g. if one met someone with epilepsy, is behaviour itself and shows a readiness to respond based on one's attitude towards people with epilepsy. However, one would prefer a stronger link to be shown between attitude and actual behaviour.

Finally, although much research has been done to determine the possible sources of negative attitudes towards the disabled in society, the forces that create and maintain prejudice should be further explored to enable educationalists to structure their approaches to attitude change.

6. 4 General Comments

The results of research study, which indicate that those children with more knowledge about a disability such as epilepsy ended up feeling people with epilepsy are really not much different from anyone else, reinforce findings noted earlier that knowledge is important for changing attitudes. Putting this in a social context, this improved attitude towards people with disabilities based on knowledge of their disability, also assists policies of normalisation being put forward in publications like the Department of Community Welfare's *New Directions*, which advocates the inclusion of disabled people in all aspects of community life, rather than separating and alienating them, thereby reducing their quality of life.

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APPENDIX I

OFFICE USE ONLY
I.D.
SCHOOL
GROUP

NAME _____
(First) (Last)

PLEASE ANSWER THE QUESTIONS BELOW BY PUTTING A TICK IN THE RIGHT BOX.

WHAT IS YOUR SEX?

(1) ☐ Girl

(2) ☐ Boy

HOW OLD ARE YOU?

(1) ☐ 9 or under

(2) ☐ 10

(3) ☐ 11 or above

Epilepsy is the name of a disorder some people have. People with epilepsy have "seizures" from time to time. Some seizures make the person stay still and look blank or lost for a few seconds. Other seizures make the person fall down shaking and jerking.

Here are 8 questions about epilepsy. The questions are not a 'test'. I just want to find out how much you know about epilepsy. For each question tick the box beside the answer that you think is the right one. You should tick only one box for each question.

1. People with epilepsy have seizures when

(1) ☐ something frightens them.

(2) ☐ they get an electric shock.

(3) ☐ the electricity in their brain gets briefly out of control.

(4) ☐ they try to do too many things at one time.

2. If a person with epilepsy looks blank or a bit lost for a few seconds, the best thing to do is

(1) ☐ wait until he recovers, then offer friendly help.

(2) ☐ run quickly and call a doctor.

(3) ☐ give him a good hard shake to 'wake him up'.

(4) ☐ get away from him or he might hurt you.

3. If, during a seizure, a person who has epilepsy falls down shaking and jerking, the best thing to do is

(1) ☐ try and stop him from shaking by holding him down.

(2) ☐ move things out of his way so that he won't bump into them and get hurt.

(3) ☐ jam something like your finger or a spoon into his mouth.

(4) ☐ try to give him something to drink right away.

Please go on to page 2 ...

4. AFTER a person has had a seizure where he fell down shaking and jerking, it is best to

(1) ☐ force him to eat something.

(2) ☐ get him up to have some exercise.

(3) ☐ push something into his mouth so that he won't swallow his tongue.

(4) ☐ turn him on his side and allow him to rest.

5. Which one of these is true of people having a seizure?

(1) ☐ They are aware of what is happening to them.

(2) ☐ They cannot do anything about it.

(3) ☐ They can stop the seizure if they try.

(4) ☐ They can talk to you.

6. People with epilepsy can take medicine. This medicine

(1) ☐ can always completely cure them.

(2) ☐ isn't much help to most of them.

(3) ☐ usually makes them have fewer seizures.

Please go on to page 3

7. How should you act towards people who have epilepsy?

(1) ☐ mostly treat them the same as anyone else

(2) ☐ keep away from them so you won't catch it

(3) ☐ watch out that they don't hurt you

(4) ☐ give them lots of special attention

8. Do you know anybody who has epilepsy?

☐ Yes

☐ No

APPENDIX II: ATTITUDE TOWARDS DISABLED PERSONS SCALE (McKerracher, 1982, p.28)

OFFICE USE ONLY	
GROUP	1
STUDENT	2
TIME	4

SCHOOL .....

NAME .....

CLASS ..... DATE .....

ATDP SCALE

By ticking the appropriate box indicate how much you agree or disagree with each of the statements about disabled people. Please answer every item.

	I disagree very much	I disagree pretty much	I disagree a little	I agree a little	I agree pretty much	I agree very much	
1. Parents of disabled children should be less strict than other parents.	☐	☐	☐	☐	☐	☐	5
2. Physically disabled persons are just as intelligent as non-disabled ones.	☐	☐	☐	☐	☐	☐	6
3. Disabled people are usually easier to get along with than other people.	☐	☐	☐	☐	☐	☐	7
4. Most disabled people feel sorry for themselves.	☐	☐	☐	☐	☐	☐	8
5. Disabled people are the same as anyone else.	☐	☐	☐	☐	☐	☐	9
6. There shouldn't be special schools for disabled children.	☐	☐	☐	☐	☐	☐	10
7. It would be best for disabled persons to live and work in special communities.	☐	☐	☐	☐	☐	☐	11
8. It is up to the government to take care of disabled persons.	☐	☐	☐	☐	☐	☐	12
9. Most disabled people worry a great deal.	☐	☐	☐	☐	☐	☐	13
10. Disabled people should not be expected to meet the same standards as non-disabled people.	☐	☐	☐	☐	☐	☐	14
11. Disabled people are as happy as non-disabled people.	☐	☐	☐	☐	☐	☐	15
12. Severely disabled people are no harder to get along with than those with minor disabilities.	☐	☐	☐	☐	☐	☐	16
13. It is almost impossible for a disabled person to lead a normal life.	☐	☐	☐	☐	☐	☐	17
14. You should not expect too much from disabled people.	☐	☐	☐	☐	☐	☐	18
15. Disabled people tend to keep to themselves much of the time.	☐	☐	☐	☐	☐	☐	19
16 Disabled people are more easily upset than non-disabled people.	☐	☐	☐	☐	☐	☐	20
17. Disabled persons cannot have a normal social life.	☐	☐	☐	☐	☐	☐	21
18. Most disabled people feel that they are not as good as other people.	☐	☐	☐	☐	☐	☐	22
19. You have to be careful of what you say when you are with disabled people.	☐	☐	☐	☐	☐	☐	23
20. Disabled people are often grouchy.	☐	☐	☐	☐	☐	☐	24

APPENDIX III: ATTITUDES TOWARDS PEOPLE WITH EPILEPSY SCALE

NAME.....

SCHOOL.....

CLASS TEACHER.....

On the following page there are 16 statements about people with epilepsy. After each statement there are four boxes. Above these boxes are listed ways you might feel about the statements. There is a box for you to tick if you disagree very much, if you disagree a little, if you agree a little or if you agree very much. Tick the box that tells how you feel about the statement.

Example:

	I Disagree Very Much	I Disagree a Little	I Agree a Little	I Agree a Lot
Christmas is a fun time of the year.	☐	☐	☐	☐

Tick the box that tells how much you feel about this statement - you may disagree very much, disagree a little, agree a little or agree very much.

Here are the statements about people with epilepsy. I'll read them to you and you tick the box that shows how you feel about the statement.

	[Disagree Very Much	[Disagree a Little	[Agree a Little	[Agree a Lot
1. Teachers should be easier on children who have epilepsy	☐	☐	☐	☐
2. People with epilepsy are scarey.	☐	☐	☐	☐
3. People with epilepsy cannot be clever.	☐	☐	☐	☐
4. A person with epilepsy can lead a normal life.	☐	☐	☐	☐
5. You should stay away from people with epilepsy.	☐	☐	☐	☐
6. Children with epilepsy should be treated the same as anyone else.	☐	☐	☐	☐
7. If you had a friend with epilepsy, other children may not like you.	☐	☐	☐	☐
8. People with epilepsy might hurt you.	☐	☐	☐	☐
9. People with epilepsy like to be treated just like other people.	☐	☐	☐	☐
10. Children with epilepsy should be at special schools.	☐	☐	☐	☐
11. You should leave people with epilepsy alone.	☐	☐	☐	☐
12. A child with epilepsy can do what other children do.	☐	☐	☐	☐
13. You have to be careful not to touch someone with epilepsy.	☐	☐	☐	☐
14. You should give someone with epilepsy lots of special attention.	☐	☐	☐	☐
15. People with epilepsy are really strange.	☐	☐	☐	☐
16. You can catch epilepsy from someone who has it.	☐	☐	☐	☐

Do you know anyone with epilepsy? ☐ YES ☐ NO

APPENDIX IV: FOLLOW-UP ACTIVITIES

NAME .....

SCHOOL .....

EPILEPSY PROJECT

Please do one of the following activities;

1. Write a letter to Amy, Tim or Lance telling them what you learned about them and how you feel about them.

OR

2. Draw a picture of something you learned about epilepsy. Write a few lines about what you have drawn.

OR

3. Write a story which begins, "If I had epilepsy, I would want other people to....."

OR

4. If you had epilepsy, how would it affect your life?

APPENDIX V:

TEACHER QUESTIONNAIRE ABOUT EPILEPSY TEACHING PACKAGE

NAME: _____ SCHOOL: _____

Would you please assist us by filling out this questionnaire?
Please return it to the Project Officer in the attached envelope. Thank you!

1. What range of grades do you think this unit would be suitable for?

2. What did you learn from the slide/tape presentation that was new, interesting or that you didn't know before?

3. On the whole, how would you rate the slide/tape presentation?

- ☐ Excellent
- ☐ Very good
- ☐ Good
- ☐ Fair
- ☐ Poor

4. What is your overall rating for each of the following points? (Please tick one response for each item)

	Very High	High	Aver-age	Low	Very Low
1. Clarity of information presented.					
2. Completeness of information presented.					
3. Suitability of material for age level of your students.					
4. Usefulness of this type of slide/tape medium for the classroom.					

5. Would you be likely to use this material yourself in your classroom

☐ Yes ☐ No ☐ If follow-up material were with it.

6. How appropriate is the Epilepsy Questionnaire for your students ?

7. Further suggestions or comments:

APPENDIX VI

QUESTION RESPONSES BY RESEARCH CATEGORY

(Percentages) P = Project schools
C = Control schools
N = "New" schools

QUESTION CATEGORY		1			2			3			4			5			6			7		
		P	C	N	P	C	N	P	C	N	P	C	N	P	C	N	P	C	N	P	C	N
A. Pre-lesson	% Answer 1	11	11	–	18	23	–	25	31	–	0	3	–	20	11	–	13	13	–	41	35	–
	2	6	7	–	49	49	–	42	35	–	6	5	–	59	62	–	25	26	–	16	10	–
	3	61	69	–	17	14	–	24	22	–	48	42	–	13	11	–	62	61	–	7	4	–
	4	22	14	–	42	35	–	10	12	–	46	50	–	9	16	–	–	–	–	37	51	–
	N Missing	–	–	260	–	1	260	–	–	260	–	1	260	1	–	260	–	–	260	–	–	260
	TOTAL N	252	228	260	252	227	260	252	228	260	252	227	260	251	228	260	252	228	260	252	228	260
B. Post-lesson	% Answer 1	0	7	5	44	20	27	5	15	42	0	1	1	18	12	14	3	7	9	72	59	58
	2	2	2	2	13	31	49	81	40	29	2	4	7	66	66	69	19	20	17	2	4	4
	3	92	76	75	8	26	17	13	40	18	29	53	42	9	10	10	78	73	75	4	5	2
	4	6	15	19	36	24	8	2	5	11	69	43	50	8	12	8	–	–	–	22	32	35
	N Missing	18	20	–	18	20	–	18	20	–	18	20	–	18	20	–	18	20	–	18	20	1
	TOTAL N	234	208	260	234	208	260	234	208	260	234	208	260	234	208	260	234	208	260	234	208	259

(from Mudge et al., 1986, Appendix IV)